

From Our President, Matthew S. Collier

Summer 2004

As usual, SAFER has been a whirlwind of activity: new and innovative products, software upgrades with powerful added features, new employees, new customers, and more...it's a challenge just to keep up!



While we have many important activities to talk about in this issue of "SAFER World" – I'm most fascinated by the more routine uses of our software that I see around the world.

We tend to talk most about the capabilities of SAFER software and its use in the "catastrophic" emergency – especially with our SAFER Real-Time and SAFER STAR products. Believe me, these capabilities are literally life-saving tools when a major event impacts one of our customers.

Over the years, however, our intelligent and resourceful customers have come up with many novel, yet fairly routine uses for our software. The **prevention of accidents before**

they occur is by far the most common use of SAFER software – breeding safety awareness through SAFER software training, drills, safety exercises, education, and emergency response planning.

Besides prevention, many plants plan certain chemical activation/ deactivation processes around the SAFER model – essentially using the weather data acquisition component to find out how it will affect a potential emission that day. Others address odor issues on a daily basis using SAFER software. Still others broadcast the weather depicted in our met monitor software module throughout their entire plant – thus informing all concerned about the latest weather conditions. Some even use the SAFER weather information to decide whether their pulp and paper plant will cut wood chips that day! **Emissions management** is becoming an extremely valuable application for SAFER software.

Reducing significant financial exposure is another very important, yet fairly routine capability offered through the judicious use of our software. Again, while the catastrophic release is certainly important when it comes to reducing a company's financial exposure, employee claims alleging harmful concentrations of toxics

emitted during relatively minor releases are very expensive, and often addressed using actual SAFER weather and gas sensor archived data. In fact, vendor complaints, usually associated with a whiff of something that might smell bad, are often dealt with using SAFER archived data - in court when necessary. Daily use of SAFER software for **claims management** can save companies significant amounts of money.

Many plants have also used our SAFER model for evaluating smoke plumes and particulate emissions; helping a company adhere to governmental guidelines and dealing with their administrative gov't apparatus; engineering analysis; public relations; media relations; community relations; and security vulnerability reviews.

Perhaps the most routine, yet maybe the most important use of SAFER software, is helping to provide the user with the thought that he or she is doing everything that can possibly be done to save the lives and resources of their plant and



Riddle...

What runs all day,
but never walks
Often murmurs, never talks
Has a bed, but never sleeps
Has a mouth, but never eats?

Answer on Page 6

community. This sublime feeling is often called "**Peace of Mind.**"

Please do not hesitate to contact me and let me know how you are using our software. I never cease to be amazed at all of the very unique ways in which our software is employed...And have a great Summer!

Matt may be reached at mcollier@safersystem.com or 805 383-9711, ext. 115.

Disaster Forum 2004: Municipal SAFER STAR Showcase by Bob Gerow

The Disaster Forum Association's bi-annual conference is a permanent part of the emergency preparedness landscape in Canada. Their long-term commitment and proven formula for success provides disaster recovery planning, business continuity, crisis communications and emergency preparedness professionals and practitioners with continuous learning opportunities in crisis mitigation, preparedness, response, and recovery.

In 2002, Disaster Forum featured a software showcase where SAFER Real-Time 9.0 was introduced and a bank of workstations were made available to the delegates to test drive the latest from Camarillo. In addition, a breakout session was held on disaster response technology which featured "SAFER STAR".

This year's conference was held in early May in Calgary, Alberta, Canada and SAFER was there

once again. This time, the presentation focused on the Alberta SAFER STAR project we covered in our last newsletter. The presentation started out by setting the stage with the historical sequence of incidents and events that led to the genesis and justification for the project. The session highlighted the project timeline, goals, and outcomes to date, including feedback from the implementation, and concluded with a detailed description of completed project design and a demonstration of the software.

After lunch, the Calgary Fire Department brought their AMV (Air Monitoring Vehicle) and a Hazardous Material Officer on hand at the conference and deployed the portable met station and SAFER STAR system. Delegates were invited to tour the unit, ask questions, and actually see the system in use.

Thank you to our Alberta SAFER STAR customers for contributing to SAFER's presentation and to the Calgary Fire Department for generously contributing to the conference by bringing their AMV along, setting it up, and manning the unit for the afternoon.

For more information about the Disaster Forum Association, please visit www.disasterforum.ca.



You may contact Bob Gerow at: 780-483-7879 or bgerow@safersystem.com.

Particulate Air Pollution and SAFER Modeling

By Dr. Shah Khajehnajafi

Soon after the tragedy of September 11th, a series of Anthrax-laced letters were sent to two US Senators and several media organizations. Five people died from exposure to the agent, and several more fell ill. These events brought to the surface a fear of the spread of biological agents or particulates, laced with deadly chemicals, into the air by terrorists. However, this is not the first time this issue has been brought to the forefront. The health effect of small particles, which penetrate deep into the lungs and cause severe respiratory problems, has been a health issue under study for many years.

There are many regulations regarding allowable levels of particulate concentrations in the air, especially for designated "pristine areas," such as national parks. Particulates are emitted from a variety of natural and manmade sources. Natural emissions include dust erosion by wind, forest fires, and volcano eruptions. Man-made emissions occur as a result of a myriad of activities, such as industrial processes (pharmaceutical, cement, coal and nuclear power plants), residential activities (e.g., coal or wood burning), traffic (e.g., cars, trucks, aircrafts, trains, ships), and agricultural activities (e.g. spraying of pesticides, etc.)

Here is a sample of the tonnage of

particulate releases from a selection of industries:

Source	Emission (tons/yr)
Electric Utility Companies (Using coal as a fuel)	3,109,000
Industrial Boilers (Mainly coal)	2,595,000
Iron and Steel	1,421,000
Cement Industries	934,000
Lime	573,000
Fuel Oil	108,000

The total yearly release of particulate from all sources in the United States is approximately 18,000,000 tons/yr.

Here is a typical diameter of certain particulates:

Particulate	Diameter (micron*)
Cement Dust	8.5
Pulverized Coal	9.5
Fuel Oil	55
Human Hair	70
Fly Ash	100

* A micron is one millionth of a meter

To simulate the transport and fate of particulates into the ambient, we have developed a SAFER particulate model, available in SAFER TRACE 9.0. This model simulates the release from a small source (e.g. a stack) or line source (e.g. a spray from a plane). The model requires an input

of the rate, the diameter, and the density of the particulate emission. It also requires the specifications of the source geometry (the length, width, and angle of the line source with respect to the horizontal plane), and the diameter and height for the stack release. The model can handle an instantaneous or continuous release. The output includes the concentration and deposition at a user's specified time. After choosing a suitable range, a user can also study the visibility of the plume.

Do you have comments or opinions regarding SAFER's particulate model? We would like to hear from you.

You may contact Shah at: shah@safersystem.com or 805 383-9711, ext. 134.

"Be a life long or short, its completeness depends on what it was lived for."

– David Starr Jordan

SAFER Systems Is Growing! Meet Our New Team Members...

By Sarah Berger



Jon Clements

Jon Clements joined SAFER in January as a Systems Support Engineer. A native of southern California, Jon grew up in Orange County and graduated from the

University of California, Santa Barbara, with a B.S. in Chemical Engineering. His favorite engineering classes were chemical process design and thermodynamics.

Jon is excited about assisting users with their technical issues and helping them to use SAFER to emulate their chemical processes as accurately as possible. He is

also involved in updating help files and would welcome any suggestions you may have for him! Please contact him at: jclements@safersystem.com or 805 383-9711, ext. 109.

Sarah Berger

Sarah Berger is our new Marketing Coordinator. She joined the company in April and looks forward to keeping SAFER users informed of all of the latest news through website updates, email blasts, and this newsletter!



Sarah graduated from the University of Virginia with a B.A. in Psychology and has experience in marketing, website and project management.

She's worked in a variety of industries, including banking, not-for-profit, and most recently as marketing content manager for a guitar amplifier manufacturer. Sarah lives in Ventura, California with her husband, Jon. You may contact Sarah at: sberger@safersystem.com or 805 383-9711, ext. 128.

"Nothing travels faster than the speed of light with the possible exception of bad news, which obeys its own special laws."


– Douglas Adams,
"The Hitchhiker's Guide to the Galaxy"

SAFER Announces SAFER Real-Time Version 9.1

By Ernie Gilbert

SAFER Systems is constantly developing product upgrades which are an integral part of our Software Support program. After finishing a SAFER TRACE upgrade earlier this year, we immediately started working on SAFER Real-Time version 9.1. As you might imagine, many customer issues raised after the release of version 9.0 were addressed. We also added some exciting new capabilities, including:

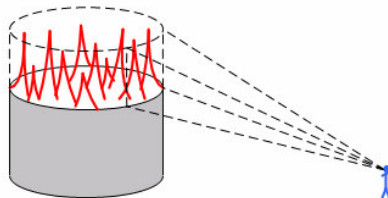
- We completed a Japanese version of the program. This was done in partnership with Sumika Technical Information Services (STIS) in Japan.

放出時間	3:06:06 PM	
経過時間	12 (Minutes)	
直前の更新	3:16:49 PM	
現在の時間	10/14/2003 3:18:42 PM	
放出位置	969711.47, 4216782.33	

- It is now possible to output the completed screen and text report to an HTML format and automatically deliver it to a web site. The program builds the web content as updates are made, including an index to

different times over the duration of an event. Also included is an administrative tool that allows the web site to be quickly changed, removing or adding saved events.

- We added to the ability to model a top-of-tank pool fire scenario. This provides a method for evaluating the impact that a fire on top of a tank has on a receptor at ground level.



- Our Advanced Back Calculation model has been optimized. We found that an event using many gas sensors over a long period of time was inefficiently processing the data. A new, faster method was developed and implemented.

- SAFER STAR Site Manager was modified to include the ability to search by city, zip code, or street name. The original version only searched by specifying

longitude and latitude.

- The thermodynamic property estimation scheme developed for SAFER TRACE 9 has been added. This routine now estimates the thermodynamic properties, making it much easier to model flammable and non-flammable chemical overpressure scenarios.

Like all software, each version offers more features, important program corrections, and product stability. Please take a little time to download and apply the version 9.1 update.

If you have not already updated to SAFER Real-Time version 9.1, it is available as an internet download to all of our valued Software Support Customers. You must have version 9.0 in order to implement version 9.1. Please contact Deborah Ecklund at decklund@safersystem.com or 805 383-9711, ext. 100, for additional assistance.

Ernie Gilbert may be reached at egilbert@safersystem.com or 805 383-9711, ext 129.

Summer Safety Tips for your Pet, Courtesy of the American Kennel Club

Beach & Water Safety

These tips are excerpted from the AKC's Canine Summer Safety Tips brochure, which may be viewed at www.akc.org. The ASPCA also has wonderful pet care & travel tips available on its website: www.asPCA.org.

Hot weather can make us all uncomfortable, and it poses special risks for your dog.

If your dog is outside on a hot day, make sure he has a shady spot to rest in. Doghouses are not good shelter during the summer as they can trap heat. You may want to fill a child's wading pool with fresh water for your dog to cool off in.

Never leave your dog in a closed vehicle on a hot day. The temperature inside a car can rise to over 100 degrees in a matter of minutes.

Always provide plenty of cool, fresh water.

Avoid strenuous exercise on extremely hot days. Take walks in the early mornings or evenings, when the sun's heat is less intense.

Try to avoid prolonged exposure to hot asphalt or sand, which can burn your dog's paws.

Make sure your dog has a shady spot to rest in and plenty of fresh water.

Salt and other minerals in ocean water can damage your dog's coat, so rinse him off at the end of the day.

Most dogs enjoy swimming, but some cannot swim, and others may hate the water. Be conscious of your dog's preferences and skills before trying to make him swim.

If you're swimming for the first time with your dog, start in shallow water and coax him in by calling his name. Encourage him with toys or treats. Never throw your dog into the water.

Don't let your dog overdo it; swimming is very hard work and he may tire quickly.

If swimming at the ocean, be careful of strong tides. Never leave your dog unattended in water.

SAFER Systems wishes you and your family a fun, safe, and happy Summer!



Trade Shows & Conferences

Here are a few of the upcoming events SAFER Systems will be attending. Hope to see you there!

June 29-July 1, 2004
CCPS 19th Annual International Conference
Orlando, FL

July 12-15, 2004
Innovative Technologies in Homeland Security 2004
San Diego, CA

September 12-14, 2004
TFI's 2004 World Fertilizer Conference (The Fertilizer Institute)
San Francisco, CA

September 20-23, 2004
AIChE Safety in Ammonia Plants & Related Facilities Symposium
Denver, CO

"Right now I'm having amnesia and deja vu at the same time. I think I've forgotten this before."
- Steven Wright

Forewarned is Forearmed: Accessing Chemical Accident Information Through the Internet

by Toyoaki Nakarai

This article was contributed by SAFER Systems' Japanese correspondent (and SAFER Sales agent), Toyoaki Nakarai. A portion of the article was translated from a Japanese publication called Chemical Economy. We thank Mr. Nakarai and the Chemical Economy for sharing this information with SAFER users.

SAFER Systems' users will be interested in chemical dispersion accidents that have taken place around the world because they can prepare for similar incidents beforehand. In order to obtain such information, free news websites and databases available over the internet are valuable resources. Here are a few examples of the materials available:

Evacuation of 150,000 people due to Chlorine Release in China

A Chlorine release accident took place in Chongqing, a city of 12 million people, on April 16, 2004. Approximately 150,000 people were ordered to evacuate after a large amount of the gas leaked from the Tianyuan Chemical Industry Plant, which was followed by several explosions.

Residents were evacuated from areas within three kilometers of the plant, one of the largest chemical plants in China. The site produces caustic soda—with production capacity of 60,000 tons/year—as well as hydrochloric acid and liquid chlorine.

Information about the release was available via CNN.com:
<http://edition.cnn.com/2004/WORLD/asiapcf/04/17/china.leak/index.html>.



UNEP Disaster Database

At the homepage of UNEP (United Nations Environment Programme), one may view nearly 130 disasters caused by chemical substances. These are selected from world accidents between 1970 to 1998, based on meeting one or more of the following criteria: at least 25 people died; the number of injured was equal to or greater than 125; the number of people evacuated was 10,000 or more; 10,000 people or more were deprived of water. When searching on the phrase "air release", one can locate about 45 disasters that occurred all over the world. Below are sixteen cases, including Bopal in 1984 and Seveso in 1976:

Table 1. Chemical Dispersion Accidents found at UNEP Disaster Database

Date	Country/ Place	Chemicals	Death	Injured	Evacuated
Jan. 1997	Pakistan/ Lahore	Chlorine	32	900	1000
July 15, 1995	Iran/ Astara	Chlorine	3	200	-
Aug. 10, 1991	Taiwan/ Kaohsiung	Sulfur Dioxide	-	600	-
Nov. 5, 1990	India/ Nagthane	Ethane, Propane	32	22	-
May 4, 1990	Cuba/ Matanzas	Ammonia	3	374	>1000
Dec. 15, 1987	Mexico/ Minatitlan	Acrylonitrile	-	>200	1000
Jan. 30, 1987	USA/ Texas City	Hydrofluoric Acid	-	255	4000
Dec. 3, 1984	India/ Bopal	Methylisocyanate	2800	50000	200000
Aug. 4, 1981	Mexico/ Montanas	Chlorine	28	1000	5000
June 1, 1981	USA/ Geisman	Chlorine	-	125	-
July 11, 1978	Spain/ San Carlos	Propylene	216	200	-
Feb. 1978	USA/ Youngtown	Chlorine	8	138	-
Oct. 7, 1976	Italy/ Seveso	Dioxine(TCCD)	-	>200	730
May 11, 1976	USA/ Houston	Ammonia	6	178	-
Mar. 7, 1976	Mexico/ Cuemavaca	Ammonia	2	500	2000
April 30, 1974	Japan/ Yokkaichi	Chlorine	-	521	-

The UNEP Disaster Database may be viewed at:
<http://www.unepie.org/pc/apell/disasters/lists/disastercat.html>

Japanese Chemical Accidents by RISCAD (Relational Information System for Chemical Accidents Database)

Available in English, this database was created by two governmental organizations: National Institute of Advanced Industrial Science and Technology and the Japan Science and Technology Corporation.

While searching on a term similar to chemical dispersion, nearly 200 accidents were found, and six of them are shown in the table shown here.

You may access this Japanese chemical accidents database through the internet at:
http://www.aist.go.jp/RIODB/RISCAD/PHP_EN/index.php

Date	Country/ Place	Chemicals	Death	Injured
Sep. 11, 2000	Japan/ Tokyo	3- Chlor Propylene Acid Chloride	0	45
June 22, 2000	Japan/ Wakayama	Hydrogen Sulfide	0	8
Dec. 2, 1994	Japan/ Hokkaido	Chlorine	0	26
Aug. 13, 1981	Japan/ Niigata	Chlorine	0	48
April 14, 1977	Japan/ Kanagawa	Chlorine	0	57
June 11, 1964	Japan/ Kanagawa	Propylene Oxide	18	100

Table 2. A part of Chemical Dispersion Accidents found at RISCAD Database

Hello from London...

By Dave Lorkin

Well it's difficult to catch a breath and 'put pen to paper' at the moment as SAFER Systems' presence has continued to grow around the world on every continent! Our staff has been extremely busy working with existing international customers in areas such as product upgrades and refresher training, as well as meeting the ever-changing requirements of new clients.

SAFER's unique technology is generating interest in ever-wider circles of industry and government alike. Some of the projects for which SAFER is now being considered will be truly ground-breaking in both magnitude and innovation. We will, of course, bring you news of these when we are able to.

As we reach the mid-point of the year, the world does, unfortunately, seem more uncertain and unpredictable than ever. Perceptions of risk, safety, and security are driven by the media and may be far from reality. SAFER and its various partners

offer solutions that can give reassurance to all. With benchmarking and measurements instead of conjecture and hyperbole, SAFER leads the way in developing systems designed to give clear information for decision-makers and making sense out of chaos.

To finish on a positive note, I would like to wish you all a very pleasant vacation season and enjoy the European Football Championship which takes us through June and in to early July. I would like to think that England might make their first major tournament final since I was born, but there is still enough certainty in the world to make that extremely unlikely.....

Enjoy the summer!

David Lorkin may be reached via
phone: 44 1245 463 484
or email: dlorkin@safersystem.com



Welcome To The Family...

SAFER Systems would like to extend a warm welcome to our newest customers and users:

ATOFINA Chemicals - Riverview, MI

ATOFINA Chemicals - Beaumont, TX

BP Canada Chemical Company - Joffre, Alberta, Canada

BP West Coast Products - Carson, CA

CIMO - Monthey, Switzerland

Honeywell - Hopewell, Virginia

Shell Canada - Sarnia, Ontario, Canada

The Lighter Side of SAFER

By John Tobo

Over the past few years, it's seemed as though California's state officials could not do anything right. There was the energy crisis, during which the media warned the public that there could be rolling blackouts throughout the state. Such blackouts would cut power to many of our state's businesses and residents, threatening the very existence of life as Californians knew it. No power to charge our electric cars, no power to run our espresso machines, no power to operate our air conditioners at home while we were at the office!! What would we do?

Of course this was just the start. We were also informed that the residents of the great state of California would have to incur a 200% increase in car registration fees. How would we be able to drive our BMW, Mercedes, and Lexus vehicles with such high fees? Not to mention the fact that many Californians have more cars than they have drivers. How would women be able to afford to get their hair, nails, and make-up done on a weekly basis? Would men no longer be able to go to the fitness centers, tanning salons, and drink their healthy smoothies for lunch? Would we have to settle for domestic vehicles!?!?

Then the straw that broke the camel's back arrived when gas nearly reached \$3.00 per gallon. Californians love their oversized

SUVs, overpowered convertible sport cars, and leisurely drives along the coast. How would we afford to do this with gas prices at this rate! You can imagine what a frenzy this caused from San Francisco to San Diego. Would Californians have to start using public transportation like the rest of the country? Would we have to start car-pooling and actually talk with those we work with, in person, rather than on our cell phones?

Californians were not going to stand for this! We fought smog and won, (okay, almost won), smoking in public and won, homelessness in Beverly Hills and won, and we were not going to stand for this injustice! But who could we turn to, to help us get out of this situation? Who was powerful enough to endure the painstaking task of leading California? Who would meet the extremely high educational standard and selflessness that Californians were looking for?

There were many candidates to choose from. Porn stars, actors, former "has-been" TV stars, and even a couple of actual politicians. It was obvious that we had to look at the credentials of each candidate and make an educated decision at the level that could only be made by Californians.

Who was the final choice? "Ahnold!" And where does SAFER fit in?

Well, on a beautiful, Southern Californian

day, which coincidentally was **October 31st**, we received a visit from our new fearless leader and his terrifying security guard!! The "Govern-a-tor" did not have much time to spend at SAFER. He was on his way to Sacramento to begin the healing process. However, we did manage to talk him into taking a quick photo before he left on his mission.



Pictured are our fearless leader and his deadly security guard!

You may contact the Governor's tough and dangerous one-man protector, John Tobo, regarding your security needs at jtobo@safersystem.com or 805 383-9711, ext 123.

World Headquarters:
 SAFER Systems, L.L.C.
 5141 Verdugo Way, Suite B
 Camarillo, CA USA 93012
 TEL: (800) 621-SAFR
 TEL: (805) 383-9711
 FAX: (805) 383-6344
 EMAIL: safer@safersystem.com
 Web site: http://www.safersystem.com

Europe:
 SAFER Systems, L.L.C.
 P.O. Box 23445
 London SE26 5WR
 United Kingdom
 TEL: [44] 1 245 463 484
 EMAIL: dlorkin@safersystem.com

Canada:
 SAFER Systems Canada
 Suite 280, 17010 103rd Avenue
 Edmonton, Alberta T8H 1C5
 Canada
 TEL: (780) 483-7879
 EMAIL: bgerow@safersystem.com

Note: Please direct any comments or suggestions regarding SAFER World to Sarah Berger at sberger@safersystem.com or 805 383-9711, ext 128. We value your opinion!

The Answer To The Riddle Is:
 A River!

Solve the Puzzle & Win!

Did you enjoy reading the newsletter? Put your knowledge to the test and see if you can solve this puzzle! Correct submissions received by July 30th will be entered into a random drawing, and one lucky winner will receive an AMAZON.COM gift certificate for \$50USD!

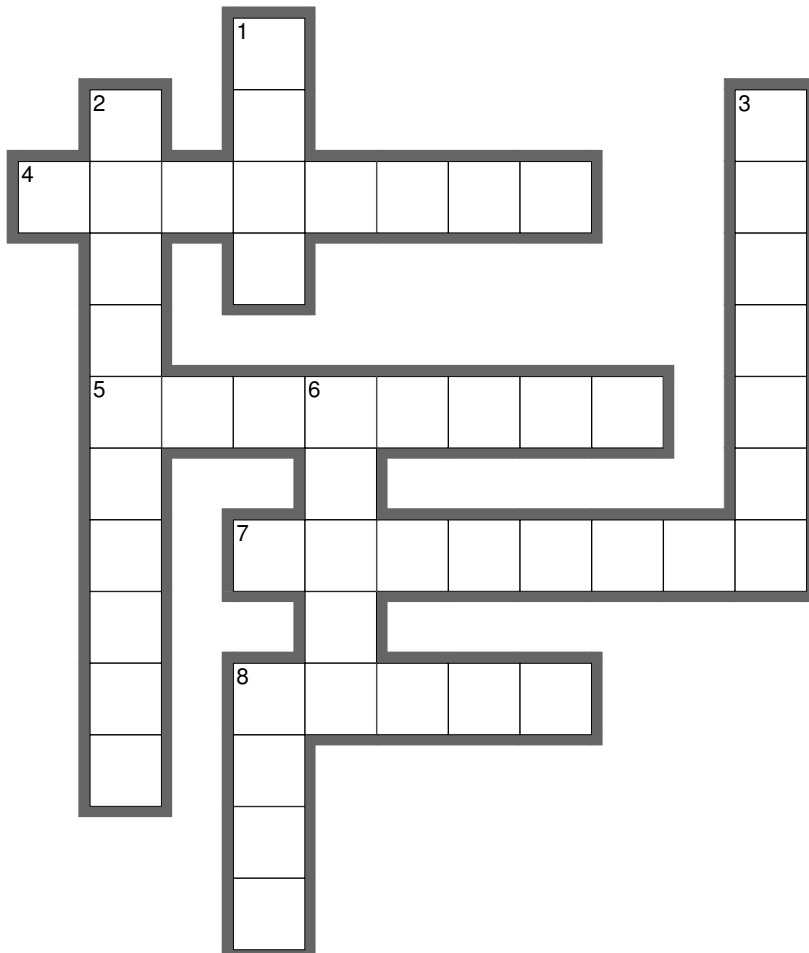
Send your completed answers to:

Email: sberger@safersystem.com or Fax 805-383-6344 (attn: Sarah Berger) .

Good luck!

ACROSS:

4. Official term for time off, often taken during the summer!
5. Type of European Championship taking place through early July. (Americans refer to this sport as soccer.)
7. Real-Time version 9.1 has many new features, including the addition of this language...
8. Sandy location to build castles and watch sunsets. (Hint: it is pictured on this page!)



DOWN:

1. This SAFER Software was exhibited at the Disaster Forum in 2002 and 2004!
2. State where SAFER's headquarters are located and the governor is "Ahnd".
3. If you have TRACE 8.4, you need to _____ to 9.0!
6. SAFER's particulate model may be found in SAFER ____ 9.0!
8. Sail ____ - also found on the cover of this newsletter.

