

SAFE News

Dedicated to Ensuring Personal Safety and Protection in Land, Sea, Air, and Space Environments

SAFE Association – Our 64th Year

Volume 24 | Number 2 | Spring 2021

President's Message

By Ebby D. Bryce, 2021 President

Welcome back! Here we are, a year after the United States and much of the rest of the world shut down for two weeks in order to stop the spread of the Corona Virus. Hopefully you catch the sarcasm in this opening statement.

Unfortunately, and as we are all aware now...the virus did not stop spreading and almost the entire world has been on lockdown for over a year. Fortunately, the human spirit is stronger than the virus. It is a pains taking reality that many people lost their lives, jobs, careers, businesses, and sanity to the virus and the lockdowns; however, the love and compassion of families, friends, communities, and even entire nations has proven that the human spirit may be cracked, but it will never be broken. Vaccines have been developed and being administered, businesses are starting to reopen, sports and outside events are starting back up, and the SAFE Association is moving full speed ahead and planning for a live symposium during the first week of November 2021.

Before I talk about this year's symposium, I would like to express my heartfelt sympathy to any and all who have been impacted by COVID 19 and/or the shutdowns and lockdowns. For me personally, I have family members, loved ones, and friends who have been impacted in one way or another. Luckily I have not experienced the loss of someone close to me, but I have witnessed the strain the loss of a loved one has had on my friends. The impacts of the shutdowns and lockdowns have been minimal to me and my close relationships; however, I know the loss and impacts are real, and for that I want to let you all know that the SAFE Association is here to support anyone and everyone who has been impacted. The Association is in good shape and we have made the decision to take everything we have learned over

the past year and implement all of the safeguards necessary to host a safe and enjoyable symposium for those who attend. We have secured enough space at the Mobile Convention Center and surrounding hotels to host a symposium with social distancing and all other safety measures in place. That being said...we also plan to include all of the past events at this year's symposium while adding some additional thoughts and ideas from some of our great board members

The Association is coordinating with other agencies and working diligently to make this a great symposium for all who can attend. In addition to the great presentations, papers, social events, and exhibits, Mr. Matt Miller, SAFE's Association Development Committee Chair is communicating with several Program Offices, CAD/PAD agencies, and other independent groups to set up additional co-located meetings and industry events. These meetings and events are in their infancy, but looking prosperous. As these additional events mature and are finalized, more information will be sent out by our Association Administrator and Symposium Committee Chair. I along with Matt and the rest of the Association Board of Directors I am excited about the set-up of events for this year's symposium and we look forward to providing more information as it is received.

In addition to these event's SAFE has offered up meeting spaces to USAF and USN/USMC. These meetings are tentative and still in development/coordination; however, the addition of these meeting rooms and meetings will allow the services to hold service wide meetings in conjunction with SAFE symposium while giving their attendees the opportunity to attend the symposium and become more familiar the goals and objectives of the SAFE Association.

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As always SAFE will be hosting a 5K Run and Golf Tournament at this year's symposium. The 5K run is tentatively planned for Wednesday morning, 3 November 2021. Ms. Marcia Baldwin will again be the SAFE Symposium 5K Run Director and will be happy to answer any questions you may have. This year will be Ms. Jennifer Nicopoulos' first year as the SAFE Symposium Golf Tournament Director. Jenn is very excited to take on this role and has started the process of coordinating with the City of Mobile and local golf courses to host the SAFE Golf Tournament. She is tentatively scheduling the Golf Tournament for Monday morning, 1 November 2021. Both events are a staple of the SAFE Symposium and I encourage you to reach out to Marcia and/or Jenn if you are interested in participating in these events and/or if you would like to volunteer time in helping coordinate or manage these two great SAFE sponsored events.

Lastly, our Symposium Committee has been thinking outside the box and is planning to take advantage of the great Mobile weather and the beautiful surrounding of the Mobile Convention Center. Don't be surprised if you find yourself in great communication and enjoying great food while also enjoying the outside air and scenery around the convention center...on multiple occasions. The Symposium Committee continues to impress me and the rest of the BOD. I am sure that their

relentlessness and creativity will amaze and impress you as well, but you will have to attend this year's Symposium to see what I am talking about...and I look forward to seeing you in Mobile and discussing your thoughts and feedback about the Association and this year's great Symposium

In closing...We understand the struggles of the past year and would like to thank everyone for supporting the Association. We know that the Association is only as strong as our members and we cannot thank you all enough for leaning and pushing forward through all of the challenges. The SAFE Association strives to provide valuable information to our members and we count on every member to gather and help disseminate the information. We stand together to make everyone better and we are always looking for volunteers to help make this association even greater. Please don't hesitate to contact me or any other Board Member if you would like to get involved as an active member or want to volunteer as a board or committee member.

Thanks again and I look forward to seeing everyone in Mobile. Have a SAFE day.

Ebby D. Bryce
President, SAFE Association

Vice President's Message

By Joe Pellettieri

I want to start off by saying thank-you to everyone for electing me as your SAFE Vice President. I have been involved with SAFE for over 20 years, starting as a chapter member and eventually chapter President of SAFE Wright Brothers to serving on the board as the Science & Technology (S&T) chair. SAFE always has been and continues to be a great organization for discussion of the technologies to protect our service members and others. One of the items that I would like to draw your attention to is that we are actively working on the SAFE Journal. A few years ago, we released the first version after a long hiatus. There is currently an active committee working to keep this as a regularly published item to showcase the great research that you all conduct. Please consider submitting an article to the SAFE Journal. Another item is that we need to begin preparing for the SAFE Symposium this fall. Please start thinking about those abstracts and presentations to showcase your work! We are probably all fatigued by constant virtual meetings, but the symposium last year was a success in that format. This year we are planning an in-person event as long as the conditions warrant. Please consider attending this event and be ready to discuss all safety related topics and network with your peers. I wish everyone continued success!

Welcome

NEW INDIVIDUAL MEMBERS

Royce McElroy
Greenacres, WA

Daniel Catrambone
Centerville, OH

Richard Kokoletsos
Chico, CA

Natalie Makel
Chico, CA

Gregory Bloom
Meadows of Dan, VA

Robert Buchanan
Houston, TX

Randolph Loving
Yorktown, VA



JOIN US!

[linkedin.com/company/safe-association](https://www.linkedin.com/company/safe-association)

SAFE Association Board of Directors Election Cycle

By 2021 Nominations Committee

The 2021 SAFE Association election cycle is in full swing. **Candidates are being sought for the following elected board positions:**

- **President-Elect – Pre-requisite.** Eligibility for nomination and election to the office of President-Elect shall require two years of continuous active membership in the Association and a minimum of one term as an elected or appointed member of the Board. The President-Elect shall ascend to the office of President upon the close of the 2021 SAFE Symposium. In the interim, the President-Elect shall be a member of the Board and performs such duties as delegated by the sitting President. Additionally, the President-Elect shall familiarize themselves with the duties of the office of President. In the event both the President and Vice President are incapacitated or otherwise unable to act, the President-Elect shall perform the duties of the President during the period of such incapacity or inability to act.
- **Vice President – No Pre-requisite.** The Vice President shall be a member of the Board. The Vice President will familiarize themselves with the activities and duties of the President and will act as the Chairperson of the Finance Committee. If the President is not available to officiate, the Vice President will act during the vacancy. In the event the President shall become permanently unable to perform the duties of the office, the Vice President shall become the acting President.
- **Secretary – No Pre-requisite.** The Secretary shall assist the Association Administrator or other Board member as directed in accordance with the procedures established by the Constitution and Bylaws, and shall assure the written record of the association is maintained and available to the members.
- **Treasurer – No Pre-requisite.** The Treasurer shall oversee the Association's financial records in accordance with the procedures established by the Constitution and Bylaws, and shall assure the issuance of at least one financial statement annually.

To be approved, each candidate must be a current member in good standing to run for office.

We encourage you to consider volunteering your talents to be a Candidate by stepping up and pitching in with your creative, thoughtful and collaborative energies. Additionally, elected and appointed board members are expected to attend the quarterly Board of Directors meetings. Your participation clearly helps further the viability of the SAFE Association in its role of supporting, protecting and saving the lives of those who intentionally go out into harm's way.

SAFE members who have any interest in pursuing one of the aforementioned elected offices or would be interested in serving in an appointed board position please contact the SAFE Administrator, Stacy Stuber at admin@safeassociation.com, a current SAFE Board member, or one of the following Nominations Committee members no later than June 30, 2021:

Al Loving
Chairperson
aloving@cox.net
(757) 218-8560

John Plaga
Committee Member
plagaja@gmail.com
(937) 405-8224

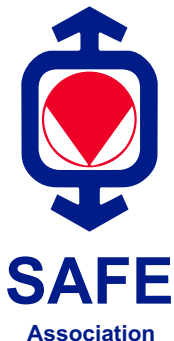
Edgar "Ted" Poe
Committee Member
edgar.poe@tedgarconsult.com
(808) 594-9245

The Nominations Committee thanks you in advance.

SAFE 2021 YTD Treasurer's Report

By Steven Bromley, 2021 Treasurer

The SAFE Association's operating income for 2021, as of February 2021, was \$8,750, with operating expenses of \$32,245, for a net income of (-\$23,494). This is consistent with past organizational financial trends, as the association gears up for the SAFE 2021 Symposium. Our total assets currently exceed \$455,216. As a reminder, more than 85% of yearly SAFE operating revenues and over 55% of expenses carry over from past SAFE Symposia. The total Net Income in 2020 was (-\$56,128) due to the negative impacts of the COVID-19 pandemic. We are projecting a much better year in 2021 and look forward to seeing everyone in Mobile!



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April 2021

2021 CALL FOR PAPERS
59th ANNUAL SAFE SYMPOSIUM
NOVEMBER 2 - 4, 2021
MOBILE CONVENTION CENTER
MOBILE, ALABAMA

The SAFE Association's Annual Symposium is the premier international showcase for unparalleled discovery including technical sessions, extensive exhibits, product demonstrations, workshops, technical debates, panel sessions, and networking opportunities. Areas of interest include, but are not limited to, the following:

- Accident Investigation
- Aviation Escape Systems
- Biodynamics and Physiology
- Crash Safety
- Directed Energy Protection
- Energetic Materials
- Extreme Environments
- Ground Vehicle Protection
- Hearing Protection
- Human Factors
- Individual Flight Equipment
- Life Support Systems
- Modeling and Simulation
- NBC Protection/CBRN PPE
- Ocular and Night Vision Systems
- Occupant Crash Protection
- Oxygen Systems/PBE
- Personnel Recovery
- Search and Rescue
- SOF Equipment
- Survival Equipment and Aids
- Test and Evaluation
- Technology Transfer
- Training and Simulation
- Troop Protection
- Windblast Protection

Deadline for Abstract Submission is
June 17, 2021

SUBMISSION GUIDELINES

Briefings, Panels (consisting of 2 or more Briefings) Demonstrations and Workshops (please specify).

Submit a 300-word abstract (electronically using the online abstract submission portal) to the SAFE Office through the SAFE website at **www.safeassociation.com**. Abstracts should be typed in 9pt Verdana font. A template is available for download on the website.

Just as the abstract submission process was last year, this year abstracts are to be submitted via a digital entry form through the SAFE website, rather than the traditional e-mailing of the abstract in MS word format to the organization. Once submitted a compiled abstract, as described above, is generated and e-mailed to the main author and automatically forwarded for consideration to the symposium.

Technical Paper abstracts should include Introduction, Methods, Results, and Discussion sections.

Panels, Briefings, Demonstrations, and Workshops should contain a paragraph outlining the safety issue to be presented, followed by a description of the program or product and how it is used to address the issue.

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Panel sessions should outline the topic or scope, number of presenters by name and affiliation, and the panel chair. When planning a panel, bear in mind that session blocks are 90 minutes. Panel sessions may list “tentative” speakers or papers for acceptance, but these must be finalized before the deadline.

You will be notified when your submission is accepted, rejected, or if revisions are required for acceptance. If your submission is rejected, you may resubmit with corrections and/or changes. Your paper will be scheduled based on the type of paper and content.

AUDIO-VISUAL PRESENTATIONS

Presenters are to bring their presentation, formatted in MS Power Point (wide-screen 16:9 is preferred), electronically saved on appropriate media (memory stick, CD, etc.) directly to their session at least **twenty minutes** prior to the scheduled start. The program allocates time between sessions to accommodate uploading the session’s presentations to available presentation equipment immediately before the start.

All authors are required to attend the Author’s Briefing to meet and coordinate with the symposium Technical Team, the session moderator, and session co-presenters. Any technical issues or needs will be addressed at that time.

The following presentation equipment will be available for all technical sessions:

- A laptop computer, projector, and screen
- Podium and wireless microphone
- Laser pointer

PUBLICATION IN SYMPOSIUM PROCEEDINGS

- **A “static” printable version of the presentation (MS PowerPoint or Adobe PDF) will be required for publication in the Proceedings.**
- All technical presentations, including papers, panels, workshops, demonstrations, etc., presented at the Symposium are eligible for inclusion in the Proceedings. It is the responsibility of the author to obtain clearance from their organizations. Presentation materials will be collected at the Symposium. The proceedings are published to the SAFE website and are available to SAFE members via their member login.
- Materials not collected at the Symposium may be submitted electronically for publication in the Proceedings to arrive at the SAFE office no later than two weeks following the final day of the symposium. Submit earlier if possible.

It is the responsibility of the submitting author(s) to ensure that all material, printed or otherwise, that is presented at the SAFE Symposium or in the SAFE Proceedings has been screened through the submitting organization’s public release process and has been approved for Unlimited Distribution.

Reminder to All SAFE Members:

It is important that the SAFE Association has your current contact information so we can contact you and distribute SAFE products, such as the Newsletter. Periodically, please go to the “Member Login” at the top, right corner of the SAFE Association web page. When the SAFE Directory appears, click on **“Update Your Profile”** at the top, left. Please review your personal information and, update anything needs to be changed, and click on **“Save Profile”** at the bottom of the page. Your efforts are much appreciated!!

SAFE Feedback Survey Review

To improve the SAFE National Symposium experience, we undertook a survey for the SAFE Reno Symposium attendance in 2019. Three groups were identified as follows:

1. Existing SAFE members who attended Reno 2019 – 252 individuals;
2. Non-Members who attended Reno 2019 – 402 individuals;
3. Existing SAFE Members who did not attend Reno 2019 – 160 individuals.

Each survey comprised of 17 questions and was live for 2 weeks, between 9th-23rd February, via an email link received from Stacy and helped to determine several key conclusions.

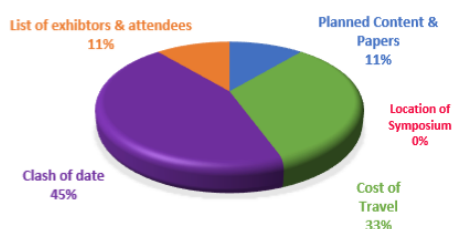
Response rate was not as high as we would have liked but after the next Symposium we will follow up with another survey immediately which should result in a higher response rate as well as an increase in data. However, a response rate of between 8-18% across the 3 surveys still provided some valuable insights to SAFE.

Due to the lack of an 'in person' Symposium in 2020, this survey will hopefully prompt guests to remember the many positive pull factors of attending, with 89% of all those surveyed responding with a yes/tentative with regards to attendance in Mobile, AL later this year.

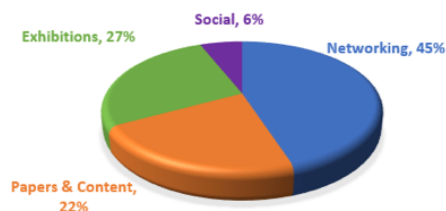
Some of the key findings from the survey are as follows:

- 45% of the reason behind non-attendance for members was a clash of date;
- Guests' favourite parts of the Symposium are Networking (45%), Exhibitions (27%) and Papers/content (22%);
- 79% of members agreed that the increase of military personnel attendance improved their opportunity to meet customers;

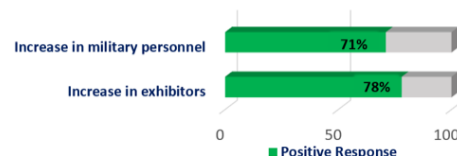
REASON FOR NON-ATTENDANCE



FAVOURITE PART OF ATTENDING SAFE



APPEAL OF INCREASE IN MILITARY PERSONNEL & EXHIBITORS



- 69% of guests use some form of social media with LinkedIn & Facebook being the most popular.
- Over 75% of the members have an interest in attending social events including the 5k run and golf tournament;
- Over 80% of both members/non-members are aware of at least 1 of the co-located groups, with just over half of the members having attended a session;
- 97% of all guests had a positive reaction regarding the delivery of papers during the Symposium;
- Over 75% of those surveyed had a positive interest in the increase in exhibitors;
- Practical demonstrations (dry or wet) had a 93% positive appeal;
- 40-54% of responses indicated having no interest in receiving credit towards CPD;
- Side meeting rooms were indicated to be very popular, 79% of guests saying that they would use them.

The key recommendations from the results of this survey included:

- Having a larger focus on social media will increase awareness and visibility of the SAFE association as well as encourage those who only interact once a year at the Symposium to stay interactive all year round.

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- Date selection for future symposiums should be carefully considered with other events as that was the main reason behind non-attendance by members, specifically looking at ASMA as the most popular.
- Casual social events seem to be an appealing idea, formal dinners less so, we would therefore recommend focusing the formal events on smaller groups or chapters.
- The exhibitors, networking and social element equate for nearly 80% of the appeal behind attending the SAFE Symposium. This drives the need for more exhibitors, demonstrations, and side meeting rooms to be organised for the next Symposium.

UP-COMING MEETING

MEETING

SAFE Association 59th Annual Symposium

DATE

November 2 - 4, 2021

LOCATION

Mobile, AL

2021 SAFE ASSOCIATION BOARD OF DIRECTORS

ELECTED BOARD MEMBERS

PRESIDENT, & FINANCE
COMMITTEE MEMBER
Ebby Bryce

PRESIDENT-ELECT & FINANCE
COMMITTEE MEMBER
Jerry Reid

SECRETARY
Kevin Divers

IMMEDIATE PAST PRESIDENT &
FINANCE COMMITTEE MEMBER
John Plaga

VICE PRESIDENT & FINANCE
COMMITTEE MEMBER
Joseph Pellettiere

TREASURER & FINANCE
COMMITTEE MEMBER
Steve Bromley

APPOINTED BOARD MEMBERS

EXECUTIVE ADVISOR
Edgar "Ted" Poe

SCIENCE & TECHNOLOGY
COMMITTEE CHAIR
Casey Pirstill

ASSOCIATION DEVELOPMENT
COMMITTEE CHAIR
Matt Miller

SYMPOSIUM COMMITTEE CHAIR
Nicole Stefanoni

CHAPTERS COMMITTEE CHAIR
Rachael Ryan

MEMBERSHIP COMMITTEE CHAIR
Steve Roberts

INFORMATION MANAGEMENT
COMMITTEE CHAIR
Stephen C. Merriman

NOMINATIONS COMMITTEE CHAIR
Allen "Al" Loving

JOURNAL AND EDITORIAL
COMMITTEE
Camille Bilger

INFORMATION MANAGEMENT
COMMITTEE CO-CHAIR
Harrison Smith

AWARDS COMMITTEE CHAIR
Mark Jones

FINANCE COMMITTEE CHAIR
Joe Spinosa

CHAPTER PRESIDENTS

CHAPTER ONE -
SOUTHERN CALIFORNIA
Kirsten Larsen

GRAND CANYON CHAPTER
Bob LaFrance

DFW METRO CHAPTER
Lizanne Luchetti

EAST COAST CHAPTER
Dave DeSimone

PACIFIC RIM CHAPTER
Dr. Robert Yonover

DOWN UNDER CHAPTER
Steve Madaras

ROCKET CITY CHAPTER
Dan Meadows

SAFE EUROPE - CHAIR
Sarah Day

MIDDLE EAST CHAPTER
Mohanad Alakal

WRIGHT BROTHERS CHAPTER
Mark Gruber

2021 SAFE ASSOCIATION AWARDS PROGRAM – Call for Nominations

Attention: Corporate, Individual, Military, and Academic Members of SAFE

This is a great opportunity to recognize the achievements of your colleagues by nominating them for a prestigious SAFE award! If you don't recognize them, who will?

Since SAFE was founded 50+ years ago, one of our key goals has been to provide an opportunity for participants in our Industry to be formally recognized for their contributions. Each year the SAFE Board of Directors announces the recipients of our industry recognition at our annual Symposium.

The SAFE Association Awards Committee is now accepting nominations for the following awards, and we need you to help us identify deserving candidates. We invite you to review the criteria for each award and nominate a worthy colleague or team.

All nominations should be submitted by close of business, Friday, 23 July, 2021.

Nominations should follow the guidelines provided on the SAFE Association website, see <https://safeassociation.com/>.

Once received, the Board of Directors will evaluate each nomination based on relevance to the award criteria and the detail of the supporting information provided in the submission. This ensures the awards go to the most deserving recipients.

To identify the most deserving recipients, we need your nominations! We all know of individuals across our industry with significant accomplishments over the past year or their entire career. Project and Program Teams that have made recent major contributions are also prevalent in the military, in new product development, contract service providers, and academic research communities.

The Award categories are:

MICHAEL R. GROST CAREER ACHIEVEMENT AWARD, recognizes the career of a deserving individual for their significant contributions to the field of safety or survival.

GENERAL SPRUANCE INDIVIDUAL ACHIEVEMENT AWARD, honors an individual who has made a recent outstanding contribution in the safety field through leadership toward or significant or significant advancement of safety and survival improvements. This contribution can be made through education, knowledge, science, application of investigative techniques, or engineering.

TEAM ACHIEVEMENT AWARD, acknowledges the recent accomplishments of an industry team in the field of safety or survival through an advancement in the education, knowledge, science, application of investigative techniques, or engineering associated with a significant improvement in safety or survival.

MERITORIOUS SERVICE AWARD, is presented to the person or persons, civilian or military, who have demonstrated a recent outstanding contribution to the preservation of human life through an action of courage.

MURRAY P. KOCH INDUSTRY AWARD, distinguishes a member of industry who has made recent significant contributions in the advancement of technology or hardware for safety and survival applications.

We encourage you to reflect upon a person or team whom is deserving of recognition by the industry we serve. Take the time now to write up a nomination and submit it to SAFE as soon as possible but no later than **Friday, 23 July 2021**. **Go to <https://safeassociation.com/>, click on the AWARDS tab and access the nomination form. Complete the form and submit it either through the website, via fax, or mail to the SAFE Association.** Specific criteria for each award can be found on our website.

The person or team being nominated can be either a current Member or Non-Member. However, all nominations must be submitted by a current SAFE member.

Recognizing our deserving colleagues is an important way for us to acknowledge their career achievements and set the bar for our younger colleagues. **Again, the deadline for submissions is close of business on Friday, 23 July 2021.**

For other questions please email the SAFE Administrator at admin@safeassociation.com or call (541) 895-3012.

SAFE ASSOCIATION AWARDS COMMITTEE

Alex McGill Personal Path Article

My story with ejection seats and escape system started over 40 years ago as a US Air Force maintainer in 1977. I was a brand-new graduate of the US Air Force Egress tech school at Canute AFB, Illinois. The USAF assigned me to my first base with the 67th Tactical Reconnaissance Wing, Bergstrom AFB, Texas to work on the RF-4C Phantom II and MK-7 ejection seat. This assignment and an event during this time would shape my future career to where I'm at today. I was sent to a specific school to learn about the MK-7 Ejection Seat. It was an intense several weeks to learn the maintenance and inspection procedures to ensure pilots had their best chance in a critical situation.

The MK-7 already had a very successful record in Vietnam saving hundreds of aircrews. After successfully finishing the MK-7 school, my on-the-job training and work started assisting with on aircraft and hourly phase inspection. One aircraft was in for a '600-hour phase'. This included bringing the ejection seats in for a full inspection scheduled checks on different devices. After my supervisor and I completed the work, we reinstalled the seats into the aircraft. The aircraft was then placed on the schedule for a training flight after completing a check flight. It went up late in the evening and ran into an issue. I had gone home and when I arrived back at work the next morning, I was told about the loss of the aircraft, but the successful ejection of the pilot and his Reconnaissance System Operator (RSO). It was really the first time through all of my training and experiences I realized how important my career field affects other lives. The pilot and RSO came to thank the shop for the work on the seats, especially for my supervisor and me. This left a very permanent and positive impression on my career even to this day. I continued to work the MK-7



on F-4Cs, Ds, Es and Gs. Though I've worked other seats, the MK-7 was my first and gave me my first career impression.

Martin Baker's MK-16 seat on the T-6 Texan II, launched my civilian career supporting ejection seats in Wichita, Kansas after retiring from active duty in 1998. I learned installation of all the pyro devices on the seat for installation on new T-6 trainers. So, Martin Baker started both phases of my career, military and civilian. My original experience of working on a set of MK-7 seats saving two lives over 40 years ago drives my continued dedication being part of a proud line of ejection seat maintainers that continue to help save lives worldwide.

Attention Corporate Members

The SAFE membership is eager to hear about what is going on with your organization! Members want to hear about anything new....like job openings, internal promotions, new products, recent contract awards, accomplishments, plans, and patents. It is up to you! SAFE members are interested in what is going on with your organization and your product lines. Please consider sending articles for future SAFE News editions. They should be sent to:

Stacy Stuber

admin@safeassociation.com

Please Send Us Your Advertisements!

Steve Merriman

scmerriman@tx.rr.com

Pax River Engineer Named Maryland Mother of the Year

By Donna Cipolloni NAS Patuxent River Public Affairs

Maria Thorpe has successfully raised two adult sons, but her ongoing commitment to the youth in her community has made her an “adjunct mother” to hundreds, maybe thousands, more children. Her willingness to share her experience and guidance with students in grades K-12 was recently acknowledged by American Mothers, Inc., when the national organization — of which Thorpe is a Maryland Chapter member — named her 2021 Maryland Mother of the Year.

“I was honored and truly humbled by the fact that I could be recognized for things I love to do,” said Thorpe, director of the Human Systems Engineering Department, part of NAVAIR’s Systems Acquisition Group at NAS Patuxent River. “And I’m excited to be an ambassador for Maryland mothers and to be able to work on issues that matter to them.”

For years, Thorpe has contributed her time to inspiring local youth through science, technology, engineering and math (STEM) education and outreach. She has participated in panel discussions, career fairs, science fair judging, speaking, mentoring, and coaching.



“I’ve had students shadow me at work, I’ve helped kids with college applications, I’ve written letters of recommendation; I’ll do pretty much anything it takes to engage our youth, to help them, and to help them know the things they’re interested in and doing are important,” she said.

An informative and popular classroom presentation, Thorpe’s “What It Takes to Be an Engineer” uses examples of how many engineers — and the different types of engineers — it takes to make an airplane.

“I like to start them young,” noted Thorpe, an electrical engineer. “Anybody who wants to listen, or I can engage or share stories with, I’m there to do that.”

One of her passions is girls in STEM, and Thorpe facilitates a Dream Queen Association’s Gals Lead program out of Great Mills High School which teaches girls its four pillars of success: Know Yourself, Dream Big, How to Overcome Obstacles, and Take Action.

“The program and what we teach helps our young ladies develop confidence,” she said. “We bring in guest speakers so they can make connections and build a network, and we help them with career clarity — what it is they want to do and how best to achieve that. We want them to believe in themselves and have goals so they can live their most awesome dream life.”

Thorpe always enjoys seeing a student’s eyes light up, especially after a visit to Pax River where she’s able to show them — up close and personal — the type of work they can do aboard the installation.

Showing them they can work here after college, that there are a multitude of engineering opportunities at Pax River, or Indian Head, or at some of the local companies, has been tremendous,” she said.

Highlights for Thorpe include the personal encounters she has with students, such as at a recent recruiting event where a clever young man who wanted to make a good impression approached her to discuss the bowtie he had 3D-printed and was wearing. But perhaps her most satisfying moments come from students she has personally mentored, who reach out later to tell her what an influence she had on their lives.

“I recently received a message from a mentee who just finished up the dissertation for their PhD; and spoke to another who finished up at the College of Southern Maryland, was a speaker at graduation, and is now off to the University of Maryland to earn their engineering degree,” Thorpe said, smiling. “Watching our youth grow, do well in school, and see them complete and accomplish things they didn’t think they could do, and then sharing that with me, is something I truly enjoy.”

(Continued on page 11)

Thorpe's own sons have followed her and her engineer husband's path, with their youngest currently in college studying engineering and the oldest already having graduated with a STEM-related degree. But who motivated her growing up?

"My mom never graduated high school; she didn't have the opportunity," Thorpe said. "But she was excellent in math and made sure each of her eight children graduated from high school. It was important to her. I was the first in my family to get a college degree and then my brothers behind me went to college."

Thorpe also credits her aunts, her older sister, and a fourth-grade teacher who exposed her to different opportunities — and with whom she remained friends until her death — with playing a part in shaping her future.

"They shared their lives with me and I listened; I took all of those lessons and made them part of my life," she added. "The women in my life — my family in general — were very supportive. They were always there for me as I went through my journey and I'm grateful for those relationships."

No doubt she also learned from them her own mothering philosophy: Love is key.

"It was important to us that we be there for our kids, even though we were a dual career family," she explained. "Everything important was built around family and being available to our kids. We tried to raise them with love, support, respect and discipline, if needed. We made sure they knew what was important, made sure they set goals, knew that we had expectations, and provided them the resources they needed to be successful. We instilled the importance of doing well in school because that's your foundation to being successful in life."

Normally held in Washington, D.C. where the winners would be able to meet with congressional delegates to discuss issues relating to mothers and families, the American Mothers, Inc. awards dinner will be held virtually on May 1 this year, due to the pandemic; but Thorpe is anxious to see the agenda and is certain it will be fantastic nonetheless.

"There's so much that we as individuals can do to help one another and I'm grateful to be working at a job that allows me the opportunity to reach out to students and to support women and families in any way I can," Thorpe stated. "It's an honor to be recognized, but I don't do it alone. I have lots of people engage with me to make things happen."

To learn more about American Mothers, Inc., visit www.americanmothers.org.

Human Factors/Human Systems Integration News

The Human Factors and Ergonomics Society (HFES) Technical Standards Committee has drafted, and is now reviewing, a new standard (HFES 400) defining Human Readiness Levels (HRL). These HRLs are patterned after the Technology Readiness Levels (TRL), originally developed by NASA and used currently by many different organizations, including the DoD. The HRLs should help determine the readiness of technology to accommodate system users (e.g., operators, maintainers, trainers, support personnel) in new systems under development.

The SAE International G-45 Human Systems Integration Committee is currently drafting three new process standards: on Design-for-Maintainer (DFM), Habitability, and Force Protection and Survivability (FPS). It is hoped that all three of these standards will be released within the next year.

The DoD is currently considering the SAE HSI standard (SAE6906) for adoption as a preferred method of contracting for HSI efforts. The DoD is also currently developing an HSI Handbook, to be a comprehensive companion piece to SAE6906 and facilitate in the implementation of SAE6906. The DoD also is planning to update its Human Engineering standard (MIL-STD-46855A) in the near future, since it has not been updated in the last 10 years.

NDIA/Human Systems Division held the "Human Systems Digital Experience" as a virtual event on five days in

March 2021. Several of the presentations from this event are available at the following link: <https://ndia.dtic.mil/2021/2021human.html>

The US DoD identified five Human Systems Integration "Gaps" a couple of years ago in order to help the services focus and coordinate their improvement efforts. The HSI Gaps are:

- Gap #1: Institutionalize an HSI Body of Knowledge (BoK)
- Gap #2: Standardize HSI Best Practices Across Services
- Gap #3: Develop Career Certification and Career Paths/Billets for HSI Workforce Supported by a Persistent Training Function
- Gap #4: Provide and Maintain HSI Tools, Databases and Processes Supporting HSI Analyses Early in the Acquisition Process
- Gap #5: Implement a Professional, Coordinated DoD HSI Outreach and Marketing Function

I am involved, one way or another in Gaps #2, #3, #4 and #5. The efforts to address all of these Gaps will take multiple years of work. If anyone would like additional information, please contact Steve Merriman at 214-533-9052 or scmerriman@tx.rr.com.

New ejection seats, new life-saving features

Collins Aerospace has been answering the call to provide military customers with life-saving ejection seats since 1978. Air Forces around the world depend on the company's class of ACES ejection seats to keep their pilots safe in an emergency, and the families of these flyers do, too.



Collins was recently awarded a \$700 million contract with the United States Air Force (USAF) to upgrade all existing ACES II® seats in the F-15 fleet. The next generation of seats, which Collins calls the ACES 5®, is a product of years of research, investment, testing and advanced design for the company. New features include:

- A patented Passive Head and Neck Protection (PHNP) System
- Passive arm and leg restraints for extra pilot protection
- A faster deploying drogue parachute
- GR-7000 primary recovery parachute
- A more convenient, cost-effective modular structure

Working together, these innovative safety features facilitate a low probability of injury for crews at airspeeds up to 600 knots. The ACES 5 has been designed to accommodate a broader range of pilot sizes, too, something that can enable more mission-ready flights. Another key differentiator? The ACES 5 has a modular structure that allows aircrews to completely remove the seat from the cockpit without removing the aircraft canopy. This means less time in the hangar for maintenance and less cost for customers.

The new seat is also reaching compliance milestones. The ACES 5 is the only ejection seat available today that has demonstrated compliance in the most stringent modern standards for airworthiness: the MIL-HDBK-516C and the most recent 2016 change notice 5.

The ACES 5 is currently in testing for the USAF T-7A Red Hawk advanced trainer and has successfully completed its first sled test at Collins' own Hurricane Mesa Testing Facility (HMTF) in Southwest Utah. Full qualification for the T-7A is expected later in 2021, and, an earlier version of the ACES 5 has already been qualified and delivered to the USAF for the B-2A Safety, Sustainment and Improvement (SSIP) program. The modularity of the seat is already proving to be a game-changer for the B-2 community, because of how easily the seat can be disassembled into its four major components and passed down to ground crews.

Within this decade, the new ACES 5 seat is slated to be retrofitted into the F-15, F-16, F-22, B-1, and A-10 aircraft and will be available for Collins' international F-15 and F-16 customers very soon.



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- Corporate listing and description of products and services on SAFE Association website with link to company website.
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GENTEX ANNOUNCES CONTRACT WITH THE REPUBLIC OF KOREA FOR PILOT PROTECTIVE CLOTHING SET

GENTEX PILOT PROTECTIVE CLOTHING SET II (PP-II) TO BE USED AS COMPLETE CBRN DEFENSE SYSTEM.

Carbondale, PA, February 9, 2021 - Gentex Corporation, a global leader in personal protection and situational awareness solutions for defense forces, emergency responders, and industrial personnel, announced today that it has signed a contract with the Republic of Korea for the Gentex Pilot Protective

Clothing Set II (PP-II) to be used as a Chemical Biological Radiological and Nuclear (CBRN) defense system. The PP-II includes complete head to toe CBRN protection including CBRN suit, gloves, socks, and the Tacair respirator for F-15 and F-16 pilots.

The \$20.6M production contract of the TACAIR product line provides the Republic of Korean Air Force with a system that seamlessly integrates mission essential equipment such as the Gentex oxygen mask, optical and communications devices.

The contract also includes extensive training on product operations and maintenance, as well as testing and storage for up to 10 years shelf life. The Gentex TACAIR Hood Assembly incorporates the MBU-20/P oxygen mask technology for positive pressure breathing (PPB) protection for both altitude and high G levels. The comfortable lightweight system is completely man-mounted and requires no aircraft modifications or power.

“For over 60 years, Gentex has been the leader in aircrew protection solutions,” said Robert McCay, vice president at Gentex, “This contract brings our industry-leading protection to the Republic of Korea, and we are proud to continue to protect global defense forces.”

Gentex’s portfolio of air products includes helmets, optical protection, respiratory, and situational awareness solutions. For more information visit, <https://www.gentexcorp.com/gentex/defense/air/>.

About Gentex Corporation

With a history of innovation that spans over 125 years, Gentex Corporation is a leading supplier of products that advance personal protection and situational awareness for global defense forces, emergency responders, and industrial personnel operating in high-performance environments. Our portfolio includes helmet system platforms, hearing protection and communications products, and capability upgrades for defense and security forces sold under the Gentex and Ops-Core brands, as well as PureFlo industrial respiratory protection systems. Privately held, Gentex is headquartered in Carbondale, Pennsylvania, and supports its global customers through a worldwide distributor network and six other facilities in the U.S., the U.K., and Australia. Learn more at www.gentexcorp.com.

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Air Force tests G-force suits for female pilots

Women who fly fighter jets or other high-speed aircraft could have a better-fitting and safer G-force suit on the way, thanks to testing that took place last week at Eglin Air Force Base in Florida.

Five female fighter pilots, as well as a female aircrew member, tested a modified Advanced Technology Anti-Gravity Suit at Eglin from Oct. 26 to Oct. 30, the Air Force said in a Tuesday release. The suit, which has been in use since 2001, is meant to protect pilots from high G-forces and prevent them from losing consciousness during maneuvers in fighter aircraft.

But the suit was designed primarily with male bodies in mind and is not very adjustable. As a result, pilots who are shorter, or have smaller or hard-to-fit body types, have had difficulty getting it to fit well.

The test represented the latest move in the Air Force's effort to try to improve the gear used by female pilots and other airmen as the service tries to become more equitable and improve its diversity. Most flight equipment in the Air Force was designed based on body measurements and proportions taken in the 1960s, when only male airmen could fly.

The poor-fitting equipment isn't just uncomfortable for female pilots or air crew. It's also dangerous and could lead to situations where pilots suffer hypoxia, lose consciousness, or suffer injuries when ejecting because it doesn't fit right.

In 2018, former Chief of Staff Gen. Dave Goldfein launched a review of all equipment used by air crew — from boots to flight suits — to ensure that both men and women have access to equipment that adequately fits their frames.

"As more women strap into fast jets to get the mission done, I think the Air Force is heading in the right direction," said Capt. Brittany Trimble, an F-16 instructor pilot and one of the pilots who tested the new suit, in the news release.

The suit was modified to include wider lacing panels in the waist, thigh and calf, to allow it to be more easily adjusted for different body proportions. It also includes an option for a "darted," or tailored, custom waist, that does not hurt the performance of the waist bladder that inflates during high-G maneuvers, the release said.

Charles Cruze, an engineer in the Air Force Lifecycle Management Center's human systems division, said that the waist can be darted up to 3.75 inches to allow a more customized, accurate fit for individual pilots.

"In the past, some pilots with a shorter torso have had issues with ATAGS that were too large riding up and causing bruising on the rib cages, while pilots who are



hard-to-fit may have had one size that fits through the legs, but need a smaller size in the waist," Cruze said. The customizable waists will prevent both issues from becoming a problem, he said.

The 85th Test and Evaluation Squadron at Eglin flew almost 20 sorties in F-16D fighters to test the new suits, carrying out both low- and high-G basic fighter maneuvers and other activities to see how the suits responded. The Air Force said the two-seater F-16D model was used so a second pilot, wearing the regular gravity suit, was also there to take over in case a problem arose with the modified suit.

The pilots and aircrew member who tested the new suit "evaluated it based on comfort and performance when compared to the normal ATAGS typically worn," said Sharon Rogers, the lead test engineer for the 46th Test Squadron. "Pilots were asked to evaluate based on not only the ATAGS during high-G maneuvers, but also during regular activities like sitting, standing, walking and climbing into and out of the aircraft."

(Continued on page 14)

The testers reported that the new suit was significantly more comfortable and functional, the release said.

"I definitely noticed improvement with the new updates and the darted waist in particular," Trimble said. "I honestly didn't expect to notice much of a difference because I'd never noticed significant issues with the ATAGS sizes before, but I was pleasantly surprised that these upgrades increased the ATAGS functionality significantly under G."

Engineers and subject matter experts from AFLCMC and the AFWERX program, under the orders of the secretary of the Air Force, began looking into how to modify flight equipment, including the anti-gravity suit, in recent years. Instead of coming up with an entirely new suit, the release said, the experts realized that existing suits could be modified to better fit women and airmen with other body types.

But it will be at least a year, or maybe two, before these modified suits are widely used across the Air Force. The 46th Test Squadron will next put together a report outlining the results of last week's tests, the release said, and the 12- to 24-month acquisition process will proceed from there.

About Stephen Losey

Stephen Losey covers leadership and personnel issues as the senior reporter for Air Force Times. He comes from an Air Force family, and his investigative reports have won awards from the Society of Professional Journalists. He has traveled to the Middle East to cover Air Force operations against the Islamic State.



HUMAN SYSTEMS' G-SUIT FEATURED IN MILITARY.COM ARTICLE

The U.S. Air Force just tested a modified "G-suit" designed with women in mind. Last week, five female fighter pilots [pictured] donned an updated version of the Advanced Technology Anti-Gravity Suit (ATAGS), specialized compression gear worn over a flight suit to help pump blood through the body when under the stresses of gravity during high-speed flight.



In 2019, the service launched a project within the Air Force Life Cycle Management Center focused on gathering female perspectives to deliver better uniforms, including maternity uniforms and flight suits. It was prompted by then-Air Force Chief of Staff Gen. David Goldfein's mission to redesign female uniforms to improve comfort and ease of wear. The effort has been supported by the Department of the Air Force's Barrier Analysis Working Group within the Women's Initiative Team, which has been instrumental in encouraging change for outdated or restrictive policies.

"These don't seem like big issues, but everything counts in the air, and having gear that fits and works as intended should be the standard," [Capt. Brittany] Trimble, [an F-16 instructor pilot who took part in the test] said in the ATAGS release. "I'm excited the Air Force is working to identify and fix these issues, especially in innovative ways like [providing aircrew flight equipment] new modification options."

Article written by Oriana Pawlyk. Photo by 1Lt Savannah Bray. Excerpt used with permission from the author. To read the full article, visit [military.com](https://www.military.com).

Letter to Martin-Baker

Howdy, Sir James & the Martin-Baker Staff.

“Beware the Ides of March” is notorious as the date of the assassination of Julius Caesar.....and a turning point in Roman history....as well as being a “turning point” in my own personal aviation history.

This is my annual announcement to you, Sir James, of how much I owe to that “Martin-Baker Magical Chair” that has saved so many aviator’s lives.

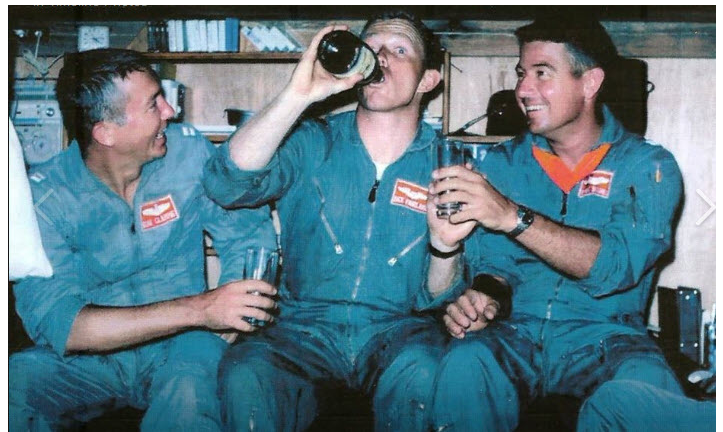
It was 53 years ago today, on Friday, the 15th of March, 1968, that your “Magical Chair” lifted me out of a dying F4-C Phantom II in Southern Laos, and put me “into the Silk”.....that lovely British parachute silk which let me down gently.....right into the tops of a 250’ jungle tree canopy.

I was leading an F-4C 2-ship out of Cam Ranh Bay AB, RVN (12th TFWg/557th TFS) interdicting logistics, truck traffic and storage “hides” on the Ho Chi Minh Trail near Saravane when my aircraft (F-4C 63-7701—a 391st TFS bird) took direct hits from anti-aircraft fire. The right engine decided to explode, and take with it most of the aircraft systems.

I was able to nurse the bird up to 13,000 feet, and get us—my backseater and I—13 miles west of the target area (it is NOT GOOD....to parachute into “the Hornet’s Nest” at the target!)..... before the airplane started rolling uncontrollably (total hydraulic failure). I was told later that the trail of fire was longer than the aircraft! An important aviator’s “creed” is to know your aircraft---the F-4 models all had direct rudder cables to the rudder, so.....I was able to stop the rotation momentarily upright, by standing on the rudder heavily, allowing us both to eject upright.

While floating down into the trees, I watched the Phabulous Phantom II rotating, spinning and gyrating in its death throes, until it exploded in mid-air a few thousand feet above the ground.

The recently issued parachute tree lowering device got me down, most of the way, out of the tree-tops..... and then jammed, leaving me hanging in mid-air about 25’ above the ground.....big bummer!!! So, after a rather long drop, and a painful and sudden stop!, I was able to walk on the ground in Laos for a couple of hours.....along with trying to hide behind some trees (not really a great camouflage solution!). My backseater was on the other side of a ridge—I had no way to communicate with him. The first aircraft over us was an Air America O-1 Bird Dog—unable to assist in the rescue. Finally, after what seemed to be a day—or TWO—of waiting to be picked up, the USAF Combat Search and Rescue Sikorsky HH-3 “Jolly Green Giant” helicopter arrived, and reeled us both up through the trees with jungle tree penetrator—great



device! Ever since that day, Jolly Green drivers and crew drink for free at MY bar!.....

So, here I am....STILL alive, these many years after the Ides of March of 1968.....that “turning point” in my personal aviation history.

But, time does move on, and some are no longer with us. I attach a photo of the celebration held upon my return that same evening to our WWII Quonset hut living quarters at Cam Ranh Bay AB, RVN.

3 of the “557th TFS Four Horsemen of the Apocalypse” were present in the photo, to celebrate/drink to my health upon my return to “home base” (the 4th was flying that night).

Guess they were happy to see me back.

Sadly, Capt Toby Hughes (Lt.Col., USAF, Retired)..... on the RIGHT in the photo, has passed away.....on Monday, 18 January 2021. Slo hand salute; Nickel on the Grass. Toby also sat on Martin-Baker seats in the F-4C for his year in Vietnam, and subsequent fighter pilot tours, although he did NOT have to “use” one! Of note....he is the composer and singer/troubadour of the Vietnam conflict song, “Tchepone”.....about attacking another Ho Chi Minh Trail logistical crossroads in Laos. For your interest and perhaps information, I offer the URL below.....written by John F. Guilmartin, Jr., USAF Academy Class of 1962, who was awarded two Silver Stars as a HH-3 “Jolly Green Giant” aircraft commander and combat instructor pilot during the Vietnam War.

<http://faculty.buffalostate.edu/fishlm/folksongs/tchepone.htm>

Thank YOU!, Sir James.....and THANKS to all your great Martin-Baker employees for giving me 53 more years of LIFE, since that day—15 March 1968.

Best regards,

Richard Fairlamb
Lt. Col., USAF (Retired)
Martin-Baker Tie Club # 1640