CONGRATULATIONS TO
Susan E. Northrup, MD, MPH, Federal Air Surgeon
Office of Aerospace Medicine, FAA

Dr. Susan E. Northrup is the Federal Air Surgeon for the U.S. Federal Aviation Administration. In this capacity, she leads the Office of Aerospace Medicine in Washington, D.C. She leads strategic management of the FAA’s aviation medical programs, which oversee all pilots. Together with the Deputy Federal Air Surgeon, she shares responsibility for the direction and management of all FAA medical programs.

This includes the development and establishment of airman medical certification, the air traffic control specialist medical qualification policy, the application of that policy in medical decision making, the medical appeals process, and the oversight of aviation industry drug and alcohol testing programs. Dr. Northrup oversees the FAA’s aeromedical education programs, the planning and conduct of aerospace medical and human factors research, and the investigation of aircraft accident medical factors.

Professional Knowledge and Experience

Dr. Northrup is a retired USAF Colonel and Chief Flight Surgeon, who while serving in the USAF represented the USAF Surgeon General as the lead military delegate to the NATO Aeromedical Working Group. She has achieved board certification in Aerospace Medicine and Occupational Medicine through the American Board of Preventive Medicine. She is a recognized expert in aviation. She has authored several scientific papers on accident investigation, the use of sleep aids by pilots, cabin air quality, and bioterrorism. She is an FAA certified private pilot.

Education, Certification and Awards

Dr. Northrup is a senior FAA aviation medical examiner. In 1985, Dr. Northrup earned a Bachelor of Arts in Chemistry with Honors in Liberal Arts from The Ohio State University. She earned a medical degree, also from Ohio State, in 1989. She was awarded a Master's degree in Public Health from the University of Texas in 1994.

Professional Associations

Dr. Northrup is a past President of the American Society of Aerospace Medicine Specialists and the Civil Aviation Medical Association. She also was vice-president for the Aerospace Medicine Association. Dr. Northrup spent nine years (2007-2016) as a trustee for the American Board of Preventive Medicine. She is on the adjunct faculty for the USAF School of Aerospace Medicine and is a Fellow of the Aerospace Medicine Association.
Greetings CAMA members! Since our last Flight Physician, three brands of COVID-19 vaccine have been actively distributed globally with aggressive vaccination programs ongoing. We all are waiting for the massive vaccination programs to have a visible impact returning both private and commercial aircraft to the skies in numbers and enabling the return to a relaxed social and business environment again.

With blue skies and following winds ahead, we anticipate that travel and social restrictions will be relatively normal again past mid-summer. And, as we and so many other associations were unable to physically meet in person during 2020, we are in the process of finalizing a historic 2021 CAMA Scientific Program, meeting at the Embassy Suites – Brooks, San Antonio TX, on the grounds of the former USAF School of Aerospace Medicine (1958 to 2010) located at previous Brooks AFB. The USAF Aerospace Medical Center was dedicated by President John F. Kennedy on 21 Nov 1963, with the shell of an X-15 aircraft on one side of the speaker’s platform and a model of the X-20 Dynasoar spacecraft on the other, delivering his famous “Cap Over the Wall” speech before 10,000 people. It would be his last official act as President.

Dr. Saboe received his BA (Biology & Chemistry) from Luther College, Decorah, IA, in 1975, his DO from Des Moines University, College of Osteopathic Medicine and Surgery, Des Moines, IA, in 1978, and served a 1-year internship at Normandy Osteopathic Hospitals, St Louis, MO. He completed an U.S. Air Force Aerospace Medicine residency program, earning an MPH from Johns Hopkins University, Bloomberg School of Public Health in 1984, and then completing a residency in Aerospace Medicine at the U.S. Air Force School of Aerospace Medicine, Brooks AFB, TX, in 1985. In 1986, he became board certified in Aerospace Medicine and in 1999, board certified in Occupational Medicine. Dr Saboe retired as a Colonel from the U.S. Air Force in 2003 and has continued to be employed as an U.S. Air Force Civil Service Flight Surgeon, as well as being active in his AME private practice (Saboe Aviation Medicine).

Dr. Saboe is a current Diplomate of the ABPM and AOBPM in Aerospace Medicine/Preventive Medicine. He is a Fellow of the Aerospace Human Factors Association, the Aerospace Medical Association, the American College of Occupational and Environmental Medicine, the American College of Preventive Medicine, the American Osteopathic College of Occupational and Preventive Medicine, and the Civil Aviation Medical Association. He is a past recipient of the CAMA President’s Commendation and the Audie & Bernice Davis Awards.

CAMA President’s Message

Greetings CAMA members! Since our last Flight Physician, three brands of COVID-19 vaccine have been actively distributed globally with aggressive vaccination programs ongoing. We all are waiting for the massive vaccination programs to have a visible impact returning both private and commercial aircraft to the skies in numbers and enabling the return to a relaxed social and business environment again.

From President Kennedy’s speech:
“I have come to Texas today to salute an outstanding group of pioneers, the men who man the Brooks Air Force Base School of Aerospace Medicine and the Aerospace Medical Center.”

“It is fitting that San Antonio should be the site of this center and this school as we gather to dedicate this complex of buildings. For this city has long been the home of the pioneers in the air. It was here that Sidney Brooks, whose memory we honor today, was born and raised. It was here that Charles Lindbergh and Claire Chennault, and a host of others, who, in World War I and World War II and Korea, and even today have helped demonstrate American mastery of the skies, trained at Kelly Field and Randolph Field, which form a major part of aviation history. And in the new frontier of outer space, while headlines may be made by others in other places, history is being made every day by the men and women of the Aerospace Medical Center, without whom there could be no history.”

“This Nation has tossed its cap over the wall of space, and we have no choice but to follow it.

https://www.youtube.com/watch?v=6DTX9OIkj9U

(Continued on Page 3)
Whatever the difficulties, they will be overcome. Whatever the hazards, they must be guarded against. With the vital help of this Aerospace Medical Center, with the help of all those who labor in the space endeavor, with the help and support of all Americans, we will climb this wall with safety and with speed -- and we shall then explore the wonders on the other side."

In addition to offering FAA AME refresher training credit for attending the FAA’s core presentations during this meeting, we anticipate having several keynote presentations from emeritus pillars in the aerospace medicine community that should pack our seats with attendees. Our planned tour of the onsite USAF human centrifuge and hyper/hypobaric chambers, toured by President Kennedy in 1963, will occur Thursday afternoon, followed by a bus ride to the historic Texas shrine, The Alamo, for tours and dinner. Friday evening will be an eventful Honors Night with dinner served, awards presented, and with a special guest speaker. USAF and US Army aerospace medicine specialists who completed their residency in aerospace medicine (RAM) at the USAF School of Aerospace Medicine (USAFSAM) while located at Brooks AFB will want to pay attention to this announcement and plan to attend this CAMA meeting.

Four weeks prior to our CAMA meeting, the Aerospace Medical Association (AsMA) will be meeting in Denver CO, 29 Aug to 2 Sep 2021. CAMA will again host CAMA Sunday, 8:30 AM to 12:30 PM, 29 Aug, with presentations from Drs. Cheryl Lowry and Brian Pinkston regarding Extreme Medicine, and from Dr. Douglas Ivan regarding topics in aviator visual problems. CME credit is anticipated. A CAMA luncheon on Monday, 30 Aug, is also scheduled that will include a presentation on Spatial Disorientation in Aviation by William R. Ercoline, PhD.

Congratulations to the CAMA Webpage committee chair, Dr. Edmond Feeks, and his committee of Dr. Avinoam Barlev, Sherry Sandoval, and Sir Rodney Williams, who have worked with John Determan in producing a new CAMA website with current information posted. A very monumental achievement for this association. All website users will immediately notice the easy-access useful links on the homepage, providing single click access to FAA aviation medical examiner (AME) information. AMEs now have a good reason to open the CAMA website daily to use as their AME FAA portal. The past three years of CAMA Scientific Meeting presentations are posted for download, as well as the CAMA Flight Physician newsletter back to the November 2015 issue. Direct access to the CAMA Archives through the Wright State University CORE Scholar program is available from the CAMA History section. The new design is extremely well thought out and offers future expansion for a CAMA members-only section, requiring a username and password for access. Well done!

https://civilavmed.org

We also are highlighting at this year’s CAMA Scientific Meeting, CAMA’s need to become involved and expand our professional reach into civilian space medicine. I wrote an article in the Nov 2020, CAMA Flight Physician regarding the beginning of powered flight and the discovered need during WWI for a medical specialty that became known as the flight surgeon in 1918. Today, a little more than 100 years later, another frontier is being opened into space through civilian commerce, in parallel with nationalized and military programs. A name change will soon be in the planning for CAMA and maybe also for a medical specialty to become known as the Astro Surgeon.

NOTICE:

Office space available at Chantilly Air – D.C.’s Premier FBO – Perfect for AME offices!

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The COVID-19 public health emergency has driven extraordinary global efforts to develop an effective and safe vaccine.

The vaccines produced by Pfizer and BioNTech, Moderna, and the Janssen Single-Dose COVID-19 vaccine manufactured by Johnson & Johnson, have been made available to the American public under an Emergency Use Authorization (EUA) by the Food and Drug Administration (FDA).

After careful review of available data regarding safety profiles, the FAA Office of Aerospace Medicine (AAM) adopts the following policy as both safe and operationally responsive to this unique situation:

**Holders of FAA-issued Airman Medical Certificates or Medical Clearances may receive the Pfizer-BioNTech, Moderna, or Johnson & Johnson COVID-19 vaccine; however, a 48-hour no fly/no safety related duty interval must be observed after each dose.**

Individuals holding an Airman Medical Certificate or Medical Clearance should be reminded that they are prohibited from performing flight crewmember duties or air traffic control duties if they do not meet medical certification requirements, including those related to adverse events from medications that render them unable to perform such duties.

AAM will monitor the patient response to each vaccine and may adjust this policy as necessary to ensure aviation safety. Additional vaccines will each be evaluated as EUAs are issued.

The **AME Minute** is presented by FAA Aviation Safety's Aerospace Medical Education Division of the Civil Aerospace Medical Institute, in association with FAA Media Solutions.

To provide feedback, please email ame-distance-training@faa.gov

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See Page 26 of this publication to use links to the AME Minute dating from November 2020 to the present time.
Friend Gone West
Tribute to Robert A. Stein, MD
By John R. Capurro, MD, CAMA Life Member

ROBERT A. STEIN, MD
9/23/1923 - 10/14/2020
- excerpted from Bob's biographic statement -

In 1923 President Harding died and Calvin Coolidge took office, Rin Tin Tin made his film debut, Aeroflot was founded, the first transcontinental flight took almost 27 hours, Yankee Stadium opened, and Bob Stein was born in Cincinnati, Ohio.

His interest in flight began at a very early age. In 1928, while on summer vacation in the town of Cedar Point, a barnstorming pilot in an open cockpit WACO landed and offered rides over Lake Erie for $5.00. Bob and his mother took to the skies and initiated the his fascination with flight. Later, in 1939, his father had an association with a retired American Airlines pilot who was also a CFI (Certified Flight Instructor).

In 1943, Bob enlisted in the US Army as a Private First Class and was assigned to medical training at the University of Cincinnati Medical College. In 1946, he was honorably discharged from the US Army and was a member of the 1947 graduating class of the Medical College. He then spent two years in Residency at the Cincinnati Jewish Hospital, followed by a fellowship in Cardiology at The Cincinnati General Hospital (now the University of Cincinnati Medical Center).

In January of 1951, he was called back into service for the Korean Conflict. He transferred to the USAF as a 1st Lieutenant and was assigned to the B36 group at Carswell AFB in Ft. Worth, Texas. There he served for two years, with “The Mighty 8th” Air Force as Flight Surgeon with the airman of the giant B36 Bombers. Living on base in Ft. Worth re-fueled his ever lasting love of flying. He was honorably discharged at the end of 1952, having achieved the rank of Captain and entered the Air Force Reserves.

Those experiences into the wonders of aviation served as a catalyst for Bob’s own flight training that saw him through single engine ATP and some 800 plus hours of instruction given. In 1970, he, along with two colleagues, purchased a single engine Comanche 260 N9279P which was happily flown all over the US and Canada. She was ultimately sold to "Lucky 8", a flying club in Milwaukee 8 years later, which culminated Bob’s personal flying career with exception of a 15 minute flight in the left seat of the "Aluminum Overcast", a B17 owned and operated by the EAA.

Bob’s many faceted interests included multiple other endeavors. He was a collector of stamps, coins, yo-yos, and classic fountain pens. He was an avid trumpet and cornet player, playing both classical and jazz, playing in bands since his childhood, and into his early 80’s played with a group at local nursing homes.

He has on his office walls multiple nature photographs from his many travels.

In the mid 1970s, Bob started collecting Revolutionary War and other American memorabilia. His collection of historic documents included letters of Washington, Jefferson, Lincoln and others, many of which were donated to the museum at Mt. Vernon, where they are on display.

Bob leaves a legacy of a lifelong commitment to the Aviation Community, lifelong learning and exploring new pursuits, and a lifelong love and commitment to family.

He will always remain my friend, colleague, and mentor in aviation.

Respectfully and warmly submitted,

John Capurro, MD
Senior AME
Cincinnati Aviation Medicine

Editor Note: Link to online obituary: Robert Stein Obituary (2020) - The Cincinnati Enquirer (legacy.com)
Editor Note 2: Per Dr. Capurro, Dr. Stein was a member of CAMA from prior to 1996 to about 2008.
COVID-19 Vaccine FAQs Update 12/31/2020
Richard S. Roth, MD

Types of Vaccines:

Inactivated or weakened virus vaccines, which use a form of the virus that has been inactivated or weakened so it does not cause disease, but still generates an immune response.

Protein-based vaccines, which use harmless fragments of proteins or protein shells that mimic the COVID-19 virus to safely generate an immune response.

Viral vector vaccines, which use a virus that has been genetically engineered so that it cannot cause disease but produces coronavirus proteins to safely generate an immune response.

RNA and DNA vaccines, a cutting-edge approach that uses genetically engineered RNA or DNA to generate a protein that itself safely prompts an immune response.

How effective will the vaccines be for disease prevention?

In Phase 3 trials, the Pfizer vaccine showed a 95% efficacy rate 7 days after the second dose. The vaccine was 94% effective in adults >65 years old.

The Moderna vaccine showed a 94% efficacy rate 14 days after the second dose. These results were consistent across gender, age, race, and ethnicity.

The AstraZeneca vaccine as of this writing (viral vectored) demonstrates a 70% efficacy rate. However, with a new dosing schedule we may see closer to a 90% efficacy level.

Novavax incorporated has started a new trial of up to 30,000 people. Novavax will now become the 5th COVID-19 vaccine to enter Stage 3 testing in the United States. The Novavax vaccine contains the spike protein found on the coronavirus, but also uses an adjuvant similar to the agent that was used in the shingles vaccine. This adjuvant is derived from the bark of an evergreen tree that is native to Chile. Novavax’s vaccine effort has been funded by 1.6 billion dollars awarded by the federal government and the funding, additionally would cover the development of the ability of Novavax to deliver after manufacturing at least 100 million doses of the vaccine for distribution within the United States.

Johnson and Johnson are also testing aggressively an additional COVID-19 viral vectored vaccine technology with the hopes for FDA approval early in 2021. This mechanism parallels the AstraZeneca model.

(Editor’s Note: The Johnson and Johnson Vaccine received FDA EUA approval o 02/17/2021—See Dr. Roth’s update on this vaccine on page 12)

How do the Pfizer and Moderna mRNA vaccines work?

The vaccines contain synthetic mRNA, which is genetic information used to make the SARS-CoV-2 spike protein. The spike protein is the part of the virus that attaches to human cells. The spike protein alone cannot cause COVID-19. Once the spike protein is created, it causes the immune system to make antibodies against the virus. These antibodies can then provide protection if a person comes into contact with the virus. The mRNA vaccines are non-infectious and do not enter the human cell nucleus, so they cannot be inserted into human DNA. Additionally, mRNA is rapidly broken down, and this theoretically reduces chances for long-term side effects. The mRNA vaccines do not have the ability to cause cancer.

FDA and FAA Approvals:

Following the Emergency Use Authorization from the U.S. Food and Drug Administration (FDA) for Pfizer’s and Moderna’s COVID-19 vaccine, the FAA has determined that pilots may receive the vaccine under the conditions of their FAA-issued airman medical certification. FAA Air Traffic Controllers, who are subject to FAA medical clearance, may also receive the vaccine.

To maintain the highest level of safety in the National Airspace System, the agency will require pilots with medical certifications or air traffic controllers with medical clearances to observe a period of 48 hours following the administration of each dose of this vaccine.
before conducting safety-sensitive aviation duties, such as flying or controlling air traffic.

Because the Moderna vaccine requires two doses, 28 days apart for maximum effectiveness, the waiting period applies after each dose. The Pfizer vaccine, which was approved last week, requires two doses 21 days apart, but the waiting period after each dose applied to both brands.

The FAA anticipates taking no additional measures to ensure safety after the initial window for side effects closes. However, the agency’s medical professionals will continuously monitor the initial distribution of the novel vaccine and documented clinical results and will adjust these recommendations as needed.

The FAA encourages Americans to receive COVID-19 vaccinations as authorized by FDA. This policy announcement pertains to a specialized group of FAA-certificated persons who perform safety-sensitive aviation duties.

Side effects: (NOT defined as Adverse Events):

The most common side effects of the vaccine are like some routine vaccines, including a sore arm, tiredness, headache, and muscle pain.

Data from clinical trials showed the following:

- About 80 percent reported pain at the injection site.
- About half reported tiredness and headache.
- Less than one-third (30 percent) reported muscle pain.

Most side effects occur within two days of getting the vaccine and last about a day.

Side effects are less common among people 55 years or older than among those younger than 55.

Side effects have now been observed to be slightly greater after the second dose than after the first dose.

Serious Adverse Events:

While very uncommon (<1.0%), adverse events were observed at slightly higher numerical rates in the vaccine study group compared to the saline placebo study group, both overall and for certain specific adverse events occurring in exceedingly small numbers. These represented common medical events that occur in the general population at similar frequency. Upon further review by FDA, these imbalances do not raise a safety concern, nor do they suggest a causal relationship to vaccination for the vast majority of reported serious adverse events.

Serious adverse events considered by FDA to be plausibly related to the vaccine or vaccination procedure were one case of shoulder injury at the vaccination site and one case of swollen lymph node in the armpit opposite the vaccination arm.

No safety concerns were identified in subgroup analyses by age, race, ethnicity, medical comorbidities, or prior SARS-CoV-2 infection.

Severe allergic reactions have been rare yet are reported following administration of Pfizer-BioNTech COVID-19 Vaccine during mass vaccination in another country outside of the clinical trial setting. Additional adverse reactions, some of which may be serious, may become apparent with more widespread use of the mRNA vaccines.

Use as a Single dose:

The Pfizer-BioNTech COVID-19 Vaccine is administered intramuscularly as a series of two doses (0.3 mL each) 3 weeks apart. The vaccine was not studied for use as a single dose.

FDA’s conclusions regarding the safety and effectiveness of the Pfizer-BioNTech COVID-19 Vaccine, and the Agency’s determination that the criteria for an Emergency Use Authorization (EUA) were met, were based on the evidence generated by the clinical trials that studied two doses and are reflected in conditions described in the emergency use authorization (EUA).

Individuals who have received one dose of the Pfizer-BioNTech COVID-19 Vaccine should receive a second dose of Pfizer-BioNTech COVID-19 Vaccine on schedule to complete the vaccination series.

Protection is assumed to be less. In data that Moderna submitted to the FDA before its Dec. 17 review for its request for emergency use authorization, for instance, its analysis suggested that the first dose provides protection from getting COVID-19, but the data did not allow for a “firm conclusion,” the FDA says. Both the Pfizer and Moderna vaccines are believed to be around 50% effective after just one dose.

Will there be ongoing effectiveness data:

Additional data on vaccine effectiveness will be generated from further follow-up of participants in clinical studies already underway before the EUA was issued, plus studies.

(Continued on Page 8)
conducted by the manufacturer or by the U.S. government evaluating effectiveness of the vaccine as used under the EUA.

How well do the vaccines work?

Overall, the Pfizer and Moderna vaccines are about 95% effective. AstraZeneca's is about 70% overall, but that protection was found to be higher in some groups.

How long does the protection last?

Because the vaccines are new, this is not yet known for sure. Based on other viruses that are similar to the coronavirus that causes COVID-19, the COVID-19 vaccines that are shown to be highly effective might protect people for a few years.

After the FDA's emergency authorization (EUA) is granted, are the vaccines still tracked?

Yes. The FDA expects the manufacturers to continue their clinical trials to find out more about how safe and effective they are and pursue full FDA approval or licensure. The EUA, which is different from FDA approval, is based on the FDA's evaluation of available evidence, assessing risks and benefits. It issues the EUA if the benefit-risk balance is favorable.

Do the COVID vaccines not only keep the person from getting sick, but also from spreading the virus if exposed?

That is not yet known. As more data and monitoring are done, experts will be able to find out if a vaccinated person, if exposed to the virus, can still spread it even if they don't get the disease themselves.

Are the vaccines free?

Yes, for patients, but the health care providers will bill insurance companies, Medicaid and Medicare, or tap federal funds for the uninsured. In one estimate, the cost per dose was $37 for Moderna's vaccine, $20 for Pfizer's, and $4 for AstraZeneca's.

Will it be possible to choose which vaccine you prefer?

In general, it does not matter, since once a vaccine gets the FDA's emergency use authorization (EUA), they all work. And even as more vaccines become authorized and available, you may have only one choice.

After I get vaccinated, do I still have to wear a mask?

Yes. Even after vaccination increases, preventive behaviors will still be needed. "The ability to reduce transmission will require not just high vaccine uptake, but ongoing social distancing and masks," And herd protection may require high rates of vaccination in groups that are themselves at low risk.

When can we expect herd immunity for COVID-19?

COVID-19 is a very contagious disease. A large percentage of the population will need to be immune against the disease (through infection or vaccination) before herd immunity will be achieved. It is not known when that will happen, but it will depend on how many people develop immunity after COVID-19 infection, how soon a COVID-19 vaccine is widely available, how many vaccine doses will be available for distribution, and how many people get vaccinated. Throughout this time period until herd immunity is achieved, it is very important to continue to wear masks in public and social distance to slow the spread of COVID-19.

Why are there still outbreaks of vaccine-preventable diseases?

Measles was declared eliminated in 2000. Yet in 2019, there were 1,282 cases reported in the U.S. Outbreaks of vaccine-preventable diseases still occur when too few individuals in a population are vaccinated. Outbreaks often begin with an imported case (someone who was travelling outside the U.S.) or person encountering an unvaccinated individual or people. These infected people then expose unprotected people to the disease. There are a number of reasons why people are unprotected: some protection from vaccines "wanes" or "fades" after a period of time. Some people don't receive all of the shots that they should to be completely protected. For example you need two measles, mumps, and rubella (MMR) injections to be adequately protected. Some people may only receive one and mistakenly believe they are protected. Some people may object because of religious reasons, and others are fearful of potential side effects or are skeptical about the benefits of vaccines.

Co-administration of other routine vaccines:

There is limited data on safety and efficacy of the COVID-19 vaccine when given with other vaccines. COVID-19 vaccines should
be given alone, at least 14 days (2 weeks) before or after you get any other type of vaccine.

**Vaccine for pregnant hosts, children and immunocompromised:**

There is limited data on the use of the vaccine for pregnant people. If you are pregnant or lactating and part of a group who is recommended to receive a COVID-19 vaccine (for example, health care personnel), you may choose to be vaccinated. You should discuss this with your health care provider to make an informed decision. There’s currently no data on the safety and efficacy of COVID-19 vaccines in pregnant women, children or individuals who are immunocompromised.

**Prior vaccine history of anaphylaxis:**

The vaccine should not be given to people with a known history of a severe allergic reaction such as anaphylaxis to any component of the COVID-19 Vaccine. People who have had a severe allergic reaction to any vaccine or injectable therapy (intramuscular, intravenous, or subcutaneous) should not receive the Pfizer vaccine at this time nor the Moderna product.

**What role does COVID-19 vaccination play in helping to curb the pandemic:**

COVID-19 vaccination will help protect ourselves and others from the disease and save lives. Vaccines both prevent and reduce severity of disease. The COVID-19 vaccine is designed to work with immune systems so it will be ready to fight the virus if a person is exposed. If a large portion of a community becomes immune to COVID-19 through vaccination, it MAY reduce the spread of the disease to others.

**How does the FDA assess safety and effectiveness of a COVID-19 vaccine submitted for EUA?**

COVID-19 vaccines are undergoing a rigorous development process that includes tens of thousands of study participants to gather required safety and efficacy data. FDA evaluates the information submitted by a vaccine manufacturer and uses all available tools and information, including records reviews, site visits, and previous manufacturing compliance history. For an EUA to be issued, FDA must determine that the known and potential benefits outweigh the known and potential risks of the vaccine.

**Should I take the COVID-19 vaccine if I have a significant history of allergic reactions?**

The CDC states severe allergic reaction to any vaccine or injectable therapy (intramuscular, intravenous, or subcutaneous) is a precaution to receiving vaccination. Vaccine providers should observe these patients for 30 minutes after vaccination to monitor for the development of immediate adverse reactions in a subgroup of patients that have demonstrated severe allergic reactions to medicines or vaccines in the past. All others need only a 15-minute observation period post vaccination. This recommendation is due to two healthcare workers in the United Kingdom developing severe allergic reactions after receiving the vaccine. They both had a history of severe allergic reactions, carried epinephrine auto injectors, and fully recovered. Those with allergies to food, pets, insects, latex, or oral medications do not fall under this precaution and only must be monitored for 15 minutes. Those with a history of severe allergic reactions should discuss this with their healthcare provider.

**Are the mRNA vaccines safe for a woman who wants to become pregnant?**

There is no evidence the COVID-19 vaccine affects fertility. Women who are trying to become pregnant or who are pregnant and for whom the vaccine is recommended may choose to be vaccinated. A discussion with her health care provider can help to make an informed decision.

**Vaccination of pregnant or lactating people:**

Observational data demonstrate that while the absolute risk is low, pregnant people with COVID-19 have an increased risk of severe illness, including illness resulting in intensive care admission, mechanical ventilation, or death. Additionally, they might be at an increased risk of adverse pregnancy outcomes, such as preterm birth.

There are currently few data on the safety of COVID-19 vaccines, including mRNA vaccines, in pregnant people. Limited data are currently available from animal developmental and reproductive toxicity studies. No safety concerns were demonstrated in rats that received Moderna COVID-19 vaccine prior to or during gestation in terms of female reproduction, fetal/embryonal development, or postnatal development. Studies in pregnant people are planned and the vaccine manufacturers are following outcomes in people in the clinical trials who became pregnant. Based on current knowledge, ex-
experts believe that mRNA vaccines are unlikely to pose a risk to the pregnant person or the fetus, because mRNA vaccines are not live vaccines. The mRNA in the vaccine is degraded quickly by normal cellular processes and does not enter the nucleus of the cell. However, the potential risks of mRNA vaccines to the pregnant person and the fetus are unknown because these vaccines have not been studied in pregnant people.

If pregnant people are part of a group that is recommended to receive a COVID-19 vaccine (e.g., healthcare personnel), they may choose to be vaccinated. A conversation between the patient and their clinical team may assist with decisions regarding the use of a mRNA COVID-19 vaccine, though a conversation with a healthcare provider is not required prior to vaccination. When making a decision, pregnant people and their healthcare providers should consider the level of COVID-19 community transmission, the patient’s personal risk of contracting COVID-19, the risks of COVID-19 to the patient and potential risks to the fetus, the efficacy of the vaccine, the side effects of the vaccine, and the lack of data about the vaccine during pregnancy.

Side effects can occur with COVID-19 vaccine use in pregnant people, similar to those expected among non-pregnant people. Pregnant people who experience fever following vaccination may be counseled to take acetaminophen as fever has been associated with adverse pregnancy outcomes. Acetaminophen may be offered as an option for pregnant people experiencing other post-vaccination symptoms as well.

There is no recommendation for routine pregnancy testing before receipt of a COVID-19 vaccine. Those who are trying to become pregnant do not need to avoid pregnancy after mRNA COVID-19 vaccination.

Should I take the vaccine if I have had convalescent plasma or monoclonal antibody?

Currently, there is no data on the safety and efficacy of COVID-19 vaccines in people who received convalescent plasma or monoclonal antibody therapy. The Advisory Committee on Immunization Practices recommends that vaccination should be deferred until 90 days after receiving convalescent plasma or monoclonal antibodies. This is to avoid interference of these treatments with vaccine-induced immune responses. The risks and benefits of vaccination based upon the underlying risk factors, including living in a nursing home, could be considered. A discussion with the person’s health care provider can help make an informed decision.

Should I take the vaccine if I already had COVID-19 and recovered? How long after should I take it?

Those who have had COVID-19 and recovered should still receive the vaccine. The length of immunity after recovering from COVID-19 is unknown; early studies show that it is not long lasting and rare cases of reinfection have been reported. The Pfizer trial did include a small percentage of individuals who previously had COVID-19 and recovered. The CDC states current evidence suggests reinfection is uncommon within 90 days after initial infection, so vaccination can be deferred until the end of this period; however, it is not known when another vaccination will be available to you. It is recommended to take the vaccine once the COVID-19 isolation period ends and it is available.

Should I get the vaccine if I am in quarantine?

Community or outpatient setting: Defer vaccination until quarantine period has ended to avoid exposing healthcare personnel (HCP) or other persons during vaccination visit.

How long after the flu shot do I have to wait to take the COVID-19 vaccine?

Wait a minimum of 14 days after receiving the flu shot or any other vaccine to receive a COVID-19 vaccine. The safety or efficacy of taking the COVID-19 vaccine at the same time as other vaccines is currently unknown.

Should premedication be given prior to vaccination?

Taking medications such as acetaminophen or ibuprofen before receiving the vaccine to try to prevent side effects like fever or pain is not recommended at this time. This is because there is not enough information on how pain-relieving medications will impact antibody responses. These medications can be taken after receiving the vaccine if side effects present.

What is the V-safe after Vaccination Health Checker?

V-safe is a VOLUNTARY smartphone-based tool that uses text messaging and web surveys to provide personalized health check-ins after a person receives a COVID vaccination. (Continued on Page 11)
-19 vaccination. Through V-safe, a person can quickly tell the CDC if they experience side effects after getting the COVID-19 vaccine. Most vaccine recipients in Tier 1 DO NOT sign up for the V-Safe program.

The V-safe database since it is voluntary has a selection bias by its design.

Persons in the V-safe program are texted DAILY from day one till day seven post vaccination and then weekly thereafter. Vaccine recipients can report anything, and it will put into the side effect database column. Such side effects are expected (soreness at the injection site, etc), but these are not necessarily adverse events.

Individuals which voluntarily chose to participate in the V-safe process and are contacted daily for the 1st week may be a subset that overestimates such symptoms compared to those that get the vaccine, deal with a bit of arm soreness post many vaccinations and go on with their day.

Percentages calculated from the V-safe database need to be looked in an educated perspective, since do NOT reflect accurately the 100s of thousands of healthcare workers or skilled facility residents that have been vaccinated yet opted to not be in the V-safe program.

During any Phase 3 vaccine trials the FDA never nor other international oversight officials make the reporting process voluntary, it is mandatory.

False positive HIV tests after COVID-19 vaccination:

British and French pharmaceutical giants GlaxoSmithKline and Sanofi Pasteur said the release of their vaccine would be pushed to late next year, while one of Australia’s four vaccine candidates was axed after trial participants returned false positive test results for HIV. The announcements could present a potential setback in the global effort to gain control of the pandemic, given that experts believe that multiple vaccine options will be required to do so. This DID NOT occur in the Moderna nor the Pfizer trials.

What are the vaccine ingredients?

Pfizer-BioNTech

- mRNA (active ingredient)
- Lipids (0.43 mg (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 0.05 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 0.09 mg 1,2-distearoyl-sn-glycero-3-phosphocholine, and 0.2 mg cholesterol)
- Potassium chloride
- Monobasic potassium phosphate
- Sodium chloride
- Dibasic sodium phosphate dihydrate
- Sucrose

Moderna

- mRNA (active ingredient)
- Lipids (SM-102, 1,2-dimyristoyl-rac-glycerol3-methoxypolyethylene glycol-2000 [PEG2000-DMG], cholesterol, and 1,2-distearoyl-sn-glycerol-3-phosphocholine [DSPC])
- Tromethamine
- Tromethamine hydrochloride
- Acetic acid
- Sodium acetate
- Sucrose

In the vial of the mRNA vaccines are lipids (cholesterol) as a carrying agent and salts for neutrality of the solution. There are NO PRESERVATIVES, NO MERCURY, NO THIMERSOL, nor nano-surveillance chips in the product. The mRNA vaccines are not an extension of the unfortunate Tuskegee syphilis study uncovered and openly condemned by all decades ago.

Richard (Rick) S. Roth, MD
Roth Aviation Medical Services
Senior Aviation Medical Examiner
Board Certified Infectious Disease/Internal Medicine
Fellow Civil Aviation Medical Association

(Late Breaking Johnson & Johnson Vaccine News on Page 12)
LATE BREAKING JOHNSON & JOHNSON COVID-19 VACCINE NEWS FROM DR. ROTH!!

Millions of doses of the Covid-19 Johnson & Johnson Vaccine will soon be available

Having two vaccines is good. But three is better — and it could make a major difference in getting the pandemic under control.

"It could be a total game changer," said Dr. Muriel Jean-Jacques, an assistant professor of medicine at Northwestern University.

Millions of doses of the viral vector-based COVID-19 vaccine developed by Johnson & Johnson will soon be available in the U.S., a much-anticipated development that could help turn the tide of the pandemic by vastly speeding the rate at which people are vaccinated.

Experts say the newly authorized vaccine could play a key role in staving off another surge of infections, particularly as the recent sharp declines in reported cases of COVID-19 appear to be leveling off and rising once again.

The single-dose vaccine, manufactured by a Johnson & Johnson subsidiary called Janssen Biotech, received emergency use authorization from the FDA. The company shipped out 4 million doses with 16 million more doses expected by the end of the month.

The Johnson & Johnson vaccine does not require ultra-cold storage conditions, as the vaccines made by Moderna and Pfizer-BioNTech do, and it can instead be kept in regular refrigerators. That could ease some distribution challenges, particularly in rural communities. And the vaccine requires only a single dose, unlike the Moderna and Pfizer vaccines, which require two shots three to four weeks apart.

A single-dose vaccine could help boost the country's rate of vaccination and increasing the number of people vaccinated each week will be critical for containing new outbreaks, especially as more contagious variants of the coronavirus become more widespread.

An analysis by the Food and Drug Administration found that the Johnson & Johnson vaccine was 85 percent effective at preventing severe COVID-19 and 100 percent effective at preventing death. In the U.S., the single dose was 72 percent effective at preventing moderate to severe disease.

Moderna's vaccine is 94 percent effective at preventing symptomatic COVID-19, and Pfizer's vaccine was found to be 95 percent effective. But experts said the three vaccines should not be compared based on those numbers alone, because they all provide strong protection against severe disease.

"All three of them are really quite good, and people should take the one that's most available to them," Dr. Anthony Fauci, director of the National Center for Allergy and Infectious Diseases.

The Johnson & Johnson clinical trials also took place later in the pandemic and in regions where worrisome variants of the coronavirus have emerged. Scientists have been particularly concerned about how well the current vaccines will protect against the variants that are circulating and new ones that may emerge. In South Africa, where a strain of the virus thought to be more contagious is widespread, the Johnson & Johnson vaccine was found to be 64 percent effective at preventing moderate to severe disease. In early analyses, both the Moderna and the Pfizer vaccines were found to be less protective against the South African variant, although neutralizing antibodies for both remained above protective levels.

Public health officials have said the U.S. is in a race against time to vaccinate as many people as possible before other variants begin spreading. Researchers are especially worried that the virus could mutate in a way that enables it to escape the protection induced by vaccines, although there is no evidence to suggest that has happened yet.

Viral vector-based vaccines differ from most conventional vaccines in that they don't actually contain antigens, but rather use the body's own cells to produce them. They do this by using a modified virus (the vector) to deliver genetic code for antigen, in the case of COVID-19 spike proteins found on the surface of the virus, into human cells. By infecting cells and instructing them to make large amounts of antigen, which then trigger an immune response, the vaccine mimics what happens during natural infection with certain pathogens - especially viruses. This has the advantage of triggering a strong cellular immune response by T cells as well the production of antibodies by B cells. An example of a viral vector vaccine is the rVSV-ZEBOV vaccine against Ebola.
ADVANTAGES AND DISADVANTAGES OF VIRAL VECTOR-BASED VACCINES

- Well-established technology
- Strong immune response
- Immune response involves B cells and T cells
- Previous exposure to the vector could reduce effectiveness
- Relatively complex to manufacture

HOW DO SUCH VACCINES TRIGGER IMMUNITY?

Viruses survive and replicate by invading their host’s cells and hijacking their protein-making machinery, so it reads the virus’ genetic code and makes new viruses. These virus particles contain antigens, molecules that can trigger an immune response. A similar principle underpins viral vector vaccines - only in this case, the host cells only receive code to make antigens. The viral vector acts as a delivery system, providing a means to invade the cell and insert the code for a different virus’ antigens (the pathogen you are trying to vaccinate against). The virus itself is harmless, and by getting the cells only to produce antigens the body can mount an immune response safely, without developing disease.

Various viruses have been developed as vectors, including adenovirus (a cause of the common cold), measles virus and vaccinia virus. These vectors are stripped of any disease-causing genes and sometimes also genes that can enable them to replicate, meaning they are now harmless. The genetic instructions for making the antigen from the target pathogen are stitched into the virus vector’s genome.

There are two main types of viral vector-based vaccines. Non-replicating vector vaccines are unable to make new viral particles; they only produce the vaccine antigen. Replicating vector vaccines also produce new viral particles in the cells they infect, which then go on to infect new cells that will also make the vaccine antigen. The COVID-19 viral vector vaccines under development use non-replicating viral vectors.

Once injected into the body, these vaccine viruses begin infecting our cells and inserting their genetic material – including the antigen gene – into the cells’ nuclei. Human cells manufacture the antigen as if it were one of their own proteins and this is presented on their surface alongside many other proteins. When the immune cells detect the foreign antigen, they mount an immune response against it.

This response includes antibody-producing B cells, as well as T cells, which seek out and destroy infected cells. T cells do this by examining the repertoire of proteins expressed on the surfaces of cells. They have been trained to recognize the body’s own proteins as ‘self’, so if they notice a foreign protein, such as an antigen from the pathogen, they will mount an immune response against the cell carrying it.

One challenge of this approach is that people may previously have been exposed to the virus vector and raise an immune response against it, reducing the effectiveness of the vaccine. Such “anti-vector immunity” also makes delivering a second dose of the vaccine challenging, assuming this is needed, unless this second dose is delivered using a different virus vector.

HOW EASY ARE THEY TO MANUFACTURE?

A major bottleneck for viral vector vaccine production is scalability. Traditionally, viral vectors are grown in cells that are attached to a substrate, rather than in free-floating cells - but this is difficult to do on a large scale. Suspension cell lines are now being developed, which would enable viral vectors to be grown in large bioreactors. Assembling the vector vaccine is also a complex process, involving multiple steps and components, each of which increases the risk of contamination. Extensive testing is therefore required after every step, increasing costs.

Dr. Rick Roth

Max Roth
## Coronavirus vs Flu: Symptoms are similar

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Coronavirus (COVID-19)</th>
<th>Influenza (FLU)</th>
<th>Cold</th>
<th>Seasonal Allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Symptoms range from mild to severe</td>
<td>Abrupt onset of symptoms</td>
<td>Gradual onset of symptoms</td>
<td>Symptoms improve or worsen depending on environment</td>
</tr>
<tr>
<td>Fever</td>
<td>Often</td>
<td>Often</td>
<td>Rare</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Sometimes</td>
<td>Sometimes</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>Cough</td>
<td>Often (usually dry)</td>
<td>Often (usually dry)</td>
<td>Mild</td>
<td>Often</td>
</tr>
<tr>
<td>Sneezing</td>
<td>No</td>
<td>No</td>
<td>Often</td>
<td>Often</td>
</tr>
<tr>
<td>Aches &amp; Pains</td>
<td>Sometimes</td>
<td>Often</td>
<td>Often</td>
<td>No</td>
</tr>
<tr>
<td>Runny or Stuffy Nose</td>
<td>Rare</td>
<td>Sometimes</td>
<td>Often</td>
<td>Often</td>
</tr>
<tr>
<td>Sore throat</td>
<td>Sometimes</td>
<td>Sometimes</td>
<td>Often</td>
<td>No</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Rare</td>
<td>Sometimes in Children</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Headaches</td>
<td>Sometimes</td>
<td>Often</td>
<td>Rare</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Shortness of breath/Difficulty breathing</td>
<td>Often</td>
<td>Rare</td>
<td>Rare</td>
<td>Rare</td>
</tr>
<tr>
<td>Loss of taste and smell</td>
<td>Often</td>
<td>Rare</td>
<td>Rare</td>
<td>Rare</td>
</tr>
</tbody>
</table>

FAA/NTSB Infectious Disease Consultant
AOPA Board Member of Medical Advisors

Civil Aviation Medical Association (CAMA)
Contact Information:

**Mailing address:** CAMA  
P. O. Box 823177  
Dallas, TX 75382

**Telephone:** 770-487-0100 (Voice or Text)

**Secure FAX:** 770-487-0080

**Web Site:** [www.civilavmed.org](http://www.civilavmed.org)

**eMail:** civilavmed@aol.com

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William R. Ercoline, Lt Col, USAF (Retired), has an M.S. Engineering Physics degree from AFIT and a Ph.D. in Engineering Management. He has about 4,000 flight hours in a variety of military and general aviation aircraft including the C-130, T-38, T-37, C-47, Cessna 172 and 210. He has over 35 years of research experience in the areas of spatial disorientation, human factors, general aviation psychology and physiology. He’s a former Associate Professor of Physics at the USAF Academy (1978-82). He currently serves as a KBR Senior Advisor for the operations of the human centrifuge and altitude chambers at formerly Brooks AFB. He has published many articles about the costs, causes and countermeasures of spatial disorientation. Bill lectures internationally and has served on many multi-service working groups and organizations specializing with aircrew performance in high workload environments. He and his wife Kathy, a retired public schoolteacher, have been married for 52 years and have two grown children and three grandchildren.

Dr. Ercoline will be the keynote speaker at the CAMA Luncheon at 12:00 noon, September 30, 2021, during the AsMA Annual Meeting at the Sheraton Hotel Downtown, Denver, Colorado. The topic of his presentation will be “Spatial Disorientation in Aviation.” He will give a presentation on “The History of Instrument Flight” during the CAMA Annual Scientific Meeting in San Antonio, September 23-25, 2021, at the Embassy Suites Brooks.

During my career as a USAF pilot, I had the good fortune to meet, fly, and become friends with Colonel Carl J. Crane, USAF (retired). And just like most pilots he liked to tell stories. Some were of interest and some were not. But there was one story that always fascinated me. It deserves a special place among stories of the early flyers.

Many of the characters in this story created the genesis of what we know today as the USAF. Their names are legendary, like Macready, Doolittle, Mitchell, Foulois, and Arnold…while a few names are hardly recognizable. And unless you are a real military history buff, you most likely never heard the names of Captain William C. Ocker or Captain (Dr) David A. Myers. Yet when you look closely at their contributions to flight, you begin to realize these two people—a pilot (Capt Bill Ocker) and a flight surgeon (Capt David Myers)—discovered and solved the most troubling flight situation confronting the early flyers.

Their work, with that of Lt Carl Crane, set the stage for all instrument flying that is done today. Military pilots, commercial pilots and most general aviation pilots owe much to these three people. The story you will hear on the 25th of September at the CAMA Conference in San Antonio will explain this claim, describe how it happened, and share with you what happened to these pilots for making such a noted discovery. A lot of the work was accomplished at Brooks Field, where the conference is being conducted. I promise you’ll enjoy their story! Photos courtesy of Doris Ocker Osborn.
Larry Walters was a truck driver by trade, but history remembers him for the patio chair he drove erratically through the approach airspace to Los Angeles International Airport. Although his risky and illegal stunt turned him into a cult hero, it also cost “Lawnchair Larry” $1,500 in FAA fines and earned him plenty of ridicule. His voyage happened 37 years ago this month (at the time of the original publication).

As recounted in a 1998 New Yorker article, the story began when a young Walters visited Disneyland and saw a lady with a large cluster of balloons. He imagined what it would be like to take flight underneath them. A few years later, Walters saw a weather balloon at a military supply store and concluded that a big bunch of those oversized balloons would be enough to lift him (and a chair) into the air.

He never stopped dreaming about that possibility, but another 20 years passed before Walters acted on the fantasy. While on the road at a Holiday Inn, he sketched a plan on placemats and convinced his long-skeptical girlfriend, Carol Van Deusen, to go along with it. Walters took off from her back yard on July 2, 1982, carried aloft by a batch of balloons that was 150 feet high.

The flight of Inspiration, the name of Walters’ amateur aircraft, didn’t go at all as planned. When the last tether that restrained his chair and 42 helium-filled weather balloons snapped, he soared faster and higher than expected. Rising at 800 feet per minute, he eventually climbed to about 16,500 feet, or nearly three miles high.

Although Walters took a pellet gun in order to pop balloons and stop his ascent, he dropped the gun (Continued on Page 17)
after shooting seven balloons at about 15,000 feet. By the time he reached his peak height, he was laboring for breath because he had not taken oxygen, and his toes were numb. He thought about jumping and using the parachute he was wearing.

He’s lucky he lived. You’re encouraged to use oxygen above 10,000 feet and required to use it above 12,500 feet in a small plane. And Walters was stuck up there.

Near the peak of Walters’ flight, airline pilots from Delta and Trans World Airlines spotted him and contacted approach control for the Los Angeles area. “We have a man in a chair attached to balloons in our 10 o’clock position, range five miles,” one of them said.

Approach control reported the incident to Long Beach Tower, the nearest airport. Walters was descending by that time as helium leaked from the remaining balloons.

“We were working in the tower, and we were getting a couple of phone calls from the approach control to see if we could visually see this bizarre thing,” said former air traffic controller Rolan Morel, who started his career at Long Beach tower in 1981.

A manager grabbed binoculars to search the sky. Morel couldn’t remember whether he spotted Walters but said the balloon flight did not affect airport traffic that morning.

Walters’ landing was as uncontrollable as the flight itself. He had planned to land in the Mojave Desert but never came close to that destination.

As he descended more rapidly than expected into a Long Beach neighborhood, Walters dumped the ballast he had taken with him — about 35 gallons of water in plastic bottles — in an attempt to slow his descent. His makeshift aircraft ended up snagged in the power lines, with Walters dangling a few feet above the ground.

That happened outside the home of a pilot who was reclining by his pool. “He sat there mesmerized, just looking at me,” Walters told George Plimpton, who wrote The New Yorker piece. “After about 15 seconds, he got out of his chair. He said, ‘Hey, do you need any help?’”

The police detained Walters long enough to check his record but let him go and told him to expect to hear from the FAA. “We know he broke some part of the Federal Aviation Act, and as soon as we decide which part it is, some type of charge will be filed,” regional safety inspector Neal Savoy told reporters.

In his interview with Plimpton, Walters recounted some of his interaction with the FAA. The agency told him the pellet gun he dropped from 15,000 feet could have killed somebody on the ground and estimated that the balloons could have taken Walters to 50,000 feet if he had not popped some of them.

On Dec. 17, 1982, the FAA initially fined Walters $4,000 for operating an aircraft without an airworthiness certificate, creating a collision danger to other aircraft, entering controlled airspace without staying in touch with air traffic control, and posing hazards to the life and property of others. The agency eventually agreed to a $1,500 fine for one charge — not communicating with air traffic control.

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“The flight was potentially unsafe,” the agency concluded, “but Walters had not intended to endanger anyone.”

Walters embraced his 15 minutes of fame after the flight. He appeared on both “The Tonight Show” and “Late Night with David Letterman,” as well as on numerous radio and game shows. The popular television series “The A-Team” incorporated a lawnchair flight into one 1983 episode, and in 1992 Timex featured Walters in a series of ads about “adventurous” people.

But Walters was mocked, too — most notably as an “at-risk survivor” in the Darwin Awards, which sarcastically recognize people “who improve our gene pool by removing themselves from it.” Ironically, Walters’ life did indeed end prematurely and on a melancholy note. He committed suicide in 1993 at age 44.

“Lawnchair Larry” has gained more notoriety since his death than he did while he was alive. He has inspired songs, art, theatrical performances and even a 2003 Australian comedy called “Danny Deckchair.” Mark Barry, a licensed pilot, once had a website all about Walters, and filmmaker Nirvan Mullick is working on a documentary about him.

Walters’ name is about to become an official part of aviation history, too. The Smithsonian’s National Air and Space Museum is acquiring the Sears patio chair from Jerry Fleck, who took ownership of it the day of Walters’ flight simply by asking if he could have it.

Tom Crouch, a senior curator at the museum, said the chair likely will be displayed at the museum’s Steven F. Udvar-Hazy Center in Chantilly, Va. He said he is interested in it because the story immediately clicks with people.

“It symbolizes the freedom of flight and the desire to achieve flight that’s embedded in all of us,” he said. “… Who hasn’t dreamed of doing something like that?”

Others clearly have shared the dream. Jean Piccard, the grand-uncle of current Solar Impulse pilot and balloonon Bertrand Piccard, invented “cluster ballooning” and took the first flight in 1937. Other pioneers went airborne in the 1950s and 1960s, and a small community of cluster balloonists has emerged since Walters’ death.

One of them, Kent Couch, was inspired by a television show about Walters’ flight. The agency fined him for multiple violations during a tandem flight with Fareed Lafta in 2012. But two other cluster balloonists — John Ninomiya and Jonathan Trappe — have flown with FAA permission and emphasize that fact.

Ninomiya, the publisher of Clusterballoon.org, started flying in 1997 and completed 82 flights by 2011, including trips in 47 states as part of his “States of Enlightenment” project. Trappe, who chronicles his journeys at Clusterballoon.com, has flown 14 times since 2008, including a trip over the English Channel and an unsuccessful attempt to cross the Atlantic Ocean.

Trappe also worked with Disney/Pixar to promote the 2009 movie “Up.” The marketing tour included tethered “armchair” balloon flights for TV personalities in major cities. Trappe later flew that chair 160 miles from Alabama to Georgia — under a cluster of balloons certified by the Greensboro Flight Standards District Office.

“For the short flights he does, it’s a fairly safe operation,” said Timothy Haley, the principal safety inspector at the FSDO. Both the balloons and the cords attached to them are color-coded so that Trappe knows which ones he can pop or cut loose. “He’s got it down to a science where he can control the thing.”

One of Trappe’s most memorable flights took him into the airspace near Raleigh-Durham International Airport in North Carolina in 2010. It was the first-ever overnight flight for such an aircraft, and Trappe talked to Raleigh Tower controller John Dinkel via two-way radio. Trappe also periodically flashed the spotlight he was carrying so Dinkel could monitor him.

Now a controller at Chicago O’Hare Tower, Dinkel remembers that night well. He said it was about two
hours from the time he first communicated with Trappe until he could no longer see his spotlight flashing. No other airplanes came into the airspace during that time.

“They wouldn’t have been able to accommodate it if he had come through in the day,” Dinkel said. “I was glad I was able to sit there and enjoy the experience and not have to work around it. ... It’s something I will never forget. I still tell people about it today.”

Trappe is a big fan of the FAA. He said his interactions with people at the FSDO and in air traffic control have been “respectful, thorough and always professional.” The agency also has opened doors for him to civil aviation authorities in other countries, including Canada, France, Italy, Mexico and the United Kingdom.

But he’s not a fan of unlicensed pilots like Walters who take flight in uncertified aircraft and with little or no regard for safety. “As a safety-conscious pilot,” Trappe said, “I work to fly as a conscientious user of our shared national airspace system, respectful of the obligations for safe operation as I enjoy the privileges of my pilot certificate.”

While Trappe certainly appreciates the love of aviation that motivated Walters, he said Walters was irresponsible not to go through pilot training and fly according to FAA rules.

“It is clearly possible to take an aviation dreamer and turn him into a safe, legal, certificated pilot,” Trappe said. “… That is the route I put forward to the many aviation dreamers that ask me how to become a cluster balloonist.”

NOTE: The articles published in this newsletter are presented for informational purposes and topics of discussion and do not necessarily represent the opinions or recommendations of the Civil Aviation Medical Association.
The University of the West Indies (UWI) conferred an honorary doctoral degree on Governor General, His Excellency Sir Rodney Williams at its Mona Campus Graduation Ceremony on Thursday January 14, 2021.

The event was shared with the general public through UWI TV and via social media. In Antigua and Barbuda, His Excellency Sir Rodney Williams, along with family members and the Honourable Prime Minister Gaston Browne, participated in the ceremony virtually from the UWI Five Islands Campus.

His Excellency Sir Rodney Williams was one of four honorary graduates to be conferred with the Doctor of Science (D.Sc.) degree by the University Council, for his outstanding contribution in the areas of Medicine and Public Service. The other recipients were: The Rt. Excellent and Rt. Hon. Sir Kennedy Simmons, St. Kitts and Nevis; Professor E. Albert Reece, Jamaica and Professor Edgar Julian Duncan, Trinidad and Tobago.

The son of a career politician, the late Honourable Ernest Emmanuel Williams, Sir Rodney followed in his father’s footsteps and served as a Member of Parliament in Antigua and Barbuda. He was appointed as Minister of Government in various ministries, holding the portfolios of Tourism, Education, Culture, Technology, Economic Development, Environment, Sports, Youth and Community Development over a twenty-year period. He also served as Deputy Speaker of the House of Representatives and as Advisor to the Prime Minister.

In addition to his political career, Sir Rodney committed his life’s work to service in the medical field. After graduating with a Bachelor of Medicine, Bachelor of Surgery (M.B.B.S) in 1976 from UWI, Sir Rodney completed his internship at the Queen Elizabeth Hospital in Barbados. He returned to Antigua and Barbuda and worked at the Holberton hospital where he lectured to nurses in Paediatrics and supervised the first group of Nurse Practitioners. He then became a District Medical Officer and served in all the districts at one time or the other and provided voluntary medical service to the people of Barbuda, when doctors were in short supply. Sir Rodney has spent over forty years of his professional life as a medical doctor in Family Medicine with specialization in Aviation and Sports Medicine.

He studied Aviation Medicine at the Royal Air Force Institute of Aviation medicine at Farnborough, UK and also at the Federal Aviation Administration Institute of Aviation Medicine in Oklahoma and became a Senior International Aviation Medical Examiner for the FAA, Transport Canada and the local Directorate of Civil Aviation (ECCAA). He served as Aviation Consultant to all the airlines flying in and out of Antigua. He became an Associate Fellow of the American Aerospace Association and a Member of the Airline Medical Directors’ Association (AMDA). Having started as a Member of the Civil Aviation Medical Association (CAMA), he later became a Trustee on the Board of Directors and received a Fellowship in Aviation Medicine from the same organization in 2007.

Sir Rodney successfully completed courses in Sports Medicine in Australia and the US Olympic Training Centre in Colorado Springs. He represented Antigua and Barbuda in a medical capacity at several high-level sporting events and conferences including: CARIFITA Games IAAF Games Pan American Games Olympic Games.

He also held the position of Vice President then President of the National Olympic Association of Antigua and Barbuda.

In 2014, Sir Rodney Williams was appointed Governor General of Antigua and Barbuda. In the same year he was honoured with two knighthood appointments by Her Majesty the Queen – Knight Grand Cross of St. Michael and St. George and Knight of the Most Venerable Order of the Hospital of St. John of Jerusalem. In 2019, he was given the Freedom to the City of London.

(Continued on Page 21)
Sir Rodney was named Patron of the Commonwealth Heritage Forum (UK) and Trustee of the London-based West India Committee in 2020. He has also been a Patron of UWI’s Global Giving programme since its inception and named the most outstanding Patron for 2020. Additionally, he was the recipient of the University of the West Indies Alumni Association’s prestigious Pelican Award in that same year. Together with his wife, HE Lady Williams, Sir Rodney is Patron of more than 30 non-profit organisations.

In his acceptance speech and charge to the 2020 graduating class, Sir Rodney expressed appreciation to the UWI for the institution’s recognition of his contribution to society, and congratulated his fellow honorary graduates on their achievements. He proceeded to impart practical advice to the UWI students, emphasizing that “multi-skill development is a necessity in today’s complex social and economic environment.”

Sir Rodney Williams received another honorary doctorate from the St. Mary’s College of Maryland, USA (2019) for national service and a Professorship from the Kazakh-Russian Medical University and the Government of Kazakhstan (2019) for his work in Sports Medicine.
CAMA Winter Board Meeting
The CAMA Executive Board held its annual Winter Board Meeting via Zoom teleconferencing on March 6, 2021. The Board covered an extensive agenda, including proposed Bylaws changes, CAMA Sunday presentations, the CAMA Luncheon during AsMA, the educational program for the Annual Scientific Meeting, the new web site changes, and other items related to CAMA administration and CAMA’s mission. There have been some exciting changes to CAMA operations, which are discussed below. If you are interested in becoming a CAMA Trustee or in serving on one of the many committees vital to CAMA operations (see the web site under “Officers” to view the various committees available), please let the home office know.

Dues and Membership 2021
Given the unusual circumstances brought on by the COVID-19 pandemic, and the cancellation of the CAMA and AsMA 2020 Annual Scientific Meetings, many CAMA members overlooked paying their CAMA dues in 2020. CAMA operating expenses continue whether or not we hold an annual meeting. There are still office supplies, WiFi, FAX and telephone expenses, web site maintenance, deposits made for coming years’ meetings and activities, production of newsletters and promotional materials, and a new CAMA web site. Please take a moment to pay your 2021 dues now. See below for a new CAMA web site feature that allows you to quickly, easily, and securely pay online.

If you are interested in CAMA Fellowship, one of the primary requirements is five continuous/consecutive years of paid membership. We will gladly accept payment of unpaid 2020 dues at the same time you pay your 2021 dues, so you will not lose your eligibility for Fellowship. Remember also that the registration fees for the Annual Scientific Meeting are considerably less for CAMA members. If you are not sure regarding your dues status for 2020, send an email to civilavmed@aol.com or give Sherry Sandoval a call at 770-487-0100, and we will check your membership status.

CAMA has a redesigned web site with advanced security, easy access to news and information, links to important FAA information and web sites, and the capability to complete dues forms and annual scientific meeting registrations online, as well as the capability to process online payments for dues and annual scientific meetings!!

The web site is www.civilavmed.org. The dues online payment forms, for both individual and corporate memberships, are located in the Members’ Lounge. You may also download and print regular copies of individual and corporate dues forms from that same page for emailing, faxing, or sending via the post office, along with your preferred form of payment, for home office processing.

Registration payment forms for the 2021 Annual Scientific Meeting being held September 23-25th at the Embassy Suites Brooks in San Antonio, Texas, will be online during the first week in May, as will regular printable registration forms. Please see the Annual Meetings page of the CAMA web site to pay online or to download registration forms.

The new pay online function is a terrific time-saving element of the redesigned CAMA web site that provides both convenience and security for CAMA members to transact business with CAMA from anywhere without needing access to a printer or FAX machine.

Of course, you may continue to join CAMA or to renew your membership via email, fax, or regular post office mail using downloaded or printed versions from the web site or forms from the newsletter, “The Flight Physician.”

Call the CAMA Home Office at 770-487-0100 or email civilavmed@aol.com if you have questions.

2021 Aerospace Medical Association Meeting in Denver, Colorado
The Aerospace Medical Association (AsMA) meeting, usually held in May of each year, has been moved to August 29—September 2, 2021, and will take place at the Sheraton Hotel Downtown in Denver, Colorado. CAMA will have a CAMA Sunday program on Sunday morning, August 29th, and will host a keynote speaker at the CAMA Luncheon on Monday, August 30th. There will not be an in-person FAA AME refresher course during the AsMA meeting as of this writing. The already scheduled May refresher course will take place online.

(Continued on Page 23)
Please remember that CAMA Sunday is a free program and that tickets to the CAMA Luncheon must be purchased IN ADVANCE from AsMA. No tickets are sold at the door.

**2021 Annual Scientific Meeting in San Antonio, Texas**

The 2021 Annual Meeting will take place in person on September 23-25, in San Antonio, Texas, at the new Embassy Suites at the old Brooks Air Force Base. **Brooks Air Force Base** was a US Air Force facility, located in San Antonio, Texas. President John F. Kennedy dedicated the **School of Aerospace Medicine** on November 21, 1963, the day before he was assassinated in Dallas, Texas. This was Kennedy’s last official act as President.

The **aerospace physiology department at Brooks City-Base in San Antonio, TX** operates a human centrifuge for the purpose of training and evaluating fighter pilots and Weapon Systems Officers for high-G flight in Air Force fighter aircraft. Today the Brooks complex houses the AFRL Department of Hyperbaric Medicine and the Davis Hyperbaric Laboratory. As part of our field trip during the Annual Scientific Meeting, we plan to see parts of the old airbase.

The **Alamo** is the centerpiece of Texas history and the gem of San Antonio. We have been fortunate to be able to arrange for a tour and catered dinner at the Alamo after our tour of Brooks City Base facilities! There will be tour guides in attendance, and the Alamo will be open for our group only that evening. Dinner will take place in the Alamo pavilion area after the tour. Please save the dates of September 23–25, 2021, so that you may participate in the exciting and educational CAMA Annual Scientific Meeting of 2021!!

If you use a paper registration form, please also include the addendum form regarding the purchase of bar tickets to be included in your registration fees. The caterer will be serving water, tea, and coffee as part of the dinner service.

The **host hotel for the 2021 meeting is the Embassy Suites San Antonio-Brooks**. It is a new facility with a spa, a lobby bar, a coffee facility, an outdoor pool, a fitness center, a salt cave, and free parking. Restaurants and shopping are located nearby, and it is a short trip to downtown San Antonio and the Riverwalk. The modern design of the hotel is different from older Embassy Suites layouts, and will be an excellent place for our meeting. Registration will open in early May, and the registration form and link with which to make hotel reservations will be on the Annual Meeting page of the CAMA web site at www.civilavmed.org. Please consider the convenience of registering online via the CAMA web site, once notification that registration is open has been published.

The educational program is currently under development and will be published on the CAMA web site once it is completed. We anticipate the theme of the meeting will be “Cardiac Conditions Affecting Aviator Performance”. There will also be elements of historical aviation accomplishments and future developments into the field of civil space travel and exploration. This is an annual meeting you do not wish to miss! Mark your calendar NOW to join us in Texas in September.

**NEWS:** AirDocs will provide COVID-19 antibody test kits at the annual meeting for only the cost of the kit—around $30.00
EDUCATIONAL OPPORTUNITIES

Online Training, Refresher, and Resources for Continuing Medical Education (CME) Credit

With the travel and meeting restrictions imposed by COVID-19 and the resulting cancellation of both the Aerospace Medical Association (AsMA) and Civil Aviation Medical Association (CAMA) Annual Scientific Meetings, opportunities for AME training and CME have become somewhat limited.

Ronan Murphy, MBChB, the CAMA Vice President of Education, has indicated that there are still resources online for those AMEs who need training and/or CME credits. Please see the information and links listed below.

If you are interested in becoming an AME, please contact the FAA Regional Office responsible for your locality. AME seminar attendance requires advance approval of the AAM-400 Education Division.

Available resources from FAA 400 Education Division:

1. FAA AME refresher courses have moved to a Zoom format through the August, 2021, courses. Click the link below to access the course schedules 2021:

   https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/ame/seminar_schedule/

   - Attendance requires approval in advance. Contact your Regional Flight Surgeon for approval, and the RFS staff will check availability for the course of your choice.
   - Registration opens three months prior to the start date of the seminar.
   - Participants must have an FAA Designee Registration System account (DRS) to sign up for the AME Refresher course.
   - If you do not have an account on DRS and wish to have one, click the following link for instructions:

     https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/ame/media/drs.pdf

2. To locate other online courses that offer CME, click the following link:

   https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/ame/ametraining/

   - Clinical Aerospace Physiology Review for Aviation Medical Examiners (CAPAME) – 6 hours
   American Association of Family Practitioners (AAFP) CME credit available
   - Multimedia Aviation Medical Examiner Refresher Course (MAMERC) 3.0 - 6 hours AAFP CME credit available

3. FAA AME Refresher Training, originally scheduled to take place at the Aerospace Medical Association (AsMA) annual meeting in May has been revised to an online AME Refresher Training session. There will be no in-person AME Refresher Training during the AsMA meeting, which has been rescheduled for August 29—September 2, 2021, at the Sheraton Downtown Hotel in Denver, Colorado

4. The Civil Aviation Medical Association (CAMA) Annual Meeting, September 23-25, in San Antonio, Texas, is approved by the FAA for AME Refresher Training. CME available—18 to 23 hours, depending upon the final educational program. Registration for the CAMA Annual Scientific Meeting will open in May, 2021.

NOTE: The FAA Headquarters has determined that all FAA AME seminars (Basic and Refresher) will be via Zoom through August, 2021. The /go/ame web site has been updated. See the following page of this publication for a list of all 2021 courses and dates.
Important HIMS Training Information

HIMS has a new website! You may wish to spend some time reviewing the new www.HIMSprogram.com website that has been updated to a WordPress platform and now has a more modern look with enhanced navigation.

HIMS will present the 2021 Basic Education Seminar dealing with alcoholism and drug dependence among professional pilots, April 13 – 15, 2021. Due to limitations related to the pandemic, this 2.5-day seminar will be presented on a virtual platform powered by Meeting Tomorrow.

This seminar is specifically tailored for individuals who have been unable to attend previous HIMS seminars, but will also serve as a timely update for those who have. Persons invited to attend include Airline Management, Pilot Peer Volunteers, Psychiatrists, Psychologists, Neuropsychologists, and FAA Aviation Medical Examiners. The FAA is working to secure ACCME credit for physician seminar attendees.

Online registration opened on Monday, February 22nd, and will close on Monday, March 29th at 3:00 pm, or sooner if seats fill before that date. Due to the strong interest in the FAA HIMS Seminars, a priority system has been implemented registration. Regardless of whether or not you have attended previously, please review the Wait List Priority & Guidelines document on the next page before registering.

To register, go to the HIMS website at www.HIMSprogram.com and click “Upcoming Seminars” on the center navigation bar and follow the prompt to register. If you fall within Priority 2 based on the Wait List Guidelines, you will receive a notification confirming that you have placed on the Wait List. HIMS Staff will contact you to let you know if you have been approved to attend during the week of April 5th.
As this event is being presented online, seminar materials will be available electronically for all attendees. The HIMS Staff will send additional information about participating in the Meeting Tomorrow virtual platform and a link for log-in closer to the event.

If you have questions, please contact the HIMS Staff at HIMS@aviationmedicine.com or call (303) 341-5220, Monday-Friday, 8:00 am to 4:00 pm MDT.

AME MINUTE 2020-2021 ISSUE GUIDE

The FAA issues monthly reminders/updates for Aviation Medical Examiners in the form of a brief audio file with information on an important subject. Following is a summary of the AME Minute issuances during 2020, in case you might have missed one. Earlier AME Minute items may be accessed from the FAA archive at: https://www.faa.gov/other_visit/aviation_industry/designees_delegations/designee_types/ame/videos/

March 2021 https://www.faa.gov/tv/?mediaId=2270 Different anticoagulant therapies - Why do different categories of anticoagulants have different wait times?

February 2021 https://www.faa.gov/tv/?mediaId=2265 FDA-approved TAVR procedure, Special Issuance - Why did the FAA introduce a policy on the TAVR procedure?

January 2021 https://www.faa.gov/tv/?mediaId=2254 AFib – Why is the FAA concerned about closure of the left atrial appendage?

May 2020 https://www.faa.gov/tv/?mediaId=2215 Insulin Policy, Part 1 – Why is the FAA now certifying pilots on insulin?

June 2020 https://www.faa.gov/tv/?mediaId=2225 Insulin Policy Part 2 – Why does the monitoring protocol for insulin-treated DM require so many reports?

June 2020 https://www.faa.gov/tv/?mediaId=2229 OTC Sleep Aids – Why is the FAA concerned about Over The Counter sleep aids?

August 2020 https://www.faa.gov/tv/?mediaId=2232 Pancreatitis – Why did the FAA issue new guidance regarding pancreatitis?

August 2020 https://www.faa.gov/tv/?mediaId=2238 – Designee Management System Profile – Why do AMEs need to update their profile in the Designee Management System annually?

September 2020 https://www.faa.gov/tv/?mediaId=2241 – Why can breast cancer be issued by an AME?

November 2020 https://www.faa.gov/tv/?mediaId=2247 – Why are there new requirements for Non-Valvular Atrial Fibrillation (AFIB) or A-Flutter?

Link to the AME Guide via the FAA web site: https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/

NOTE: This link is also found on the HOME page of the CAMA web site at www.civilavmed.org, along with other important FAA links.
The financial resources of individual member dues alone cannot sustain the Association’s pursuit of its broad goals and objectives. Its fifty-plus-year history is documented by innumerable contributions toward aviation health and safety that have become a daily expectation by airline passengers worldwide. Support from private and commercial sources is essential for CAMA to provide one of its most important functions: that of education. The following support CAMA through corporate and sustaining memberships, and we recognize the support of our lifetime members:

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  - MBS International Airport
  - 8430 Garfield Road
  - Freeland, MI 48623
  - [www.airdocs.net](http://www.airdocs.net)

- **Allied Pilots Association**
  - 14600 Trinity Boulevard
  - Suite 500
  - Fort Worth, TX 76155
  - [www.alliedpilots.org](http://www.alliedpilots.org)

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  - P. O. Box 1229
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  - [www.doppeldeckerdesign.com](http://www.doppeldeckerdesign.com)

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  - P. O. Box 20787
  - Atlanta, GA 30320-9990
  - [www.harveywatt.com](http://www.harveywatt.com)

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  - 4722 N. 24th Street, Suite 450
  - Phoenix, AZ 85016
  - [www.medaire.com](http://www.medaire.com)

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  - Bethany, OK 73008
  - [www.leftseat.com](http://www.leftseat.com)

- **Singular Sleep, LLC**
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  - Ponte Vedra Beach, FL 32082
  - [www.singularsleep.com](http://www.singularsleep.com)

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CAMA is very pleased to announce a number of new members to our organization since our last publication. We welcome the following physicians and organizations into CAMA, and we look forward to working with each of them over the coming years.

**New Members**

Bradley K. Harrison, MD, Life Member
Kansas Aviation Medicine
1133 College Avenue, A211
Manhattan, KS 66502
Senior AME, Pilot, HIMS
Specialty: Family Medicine

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Richard Ronan Murphy, MBChB
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28 Flight Physician March 2021
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NOTE: Membership is from January 1st through December 31st of each year

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