

**Flight Medicine:  
Touching Lives...  
Touching the Face of God...  
Sean Smith  
RN, BSN, NR-P**





# Faculty / Moderator: NO CONFLICTS



**Sean G. Smith, BSN  
Flight RN-Paramedic**

CNPT, FP-C, TP-C, CCRN-K, CCRN (CMC), CFRN, CEN, CPEN, etc  
(lab rat, bouncer, nuclear engineering student, super secret squirrel, lab rat...ICU/Flight/ED/ Ebola/ Humanitarian Missions.....) 20 years Aircrew: Military, NASA (PRN), Civilian

**The Emergency Medical Response  
Special Interest Group of WADEM**

**criticalcareprofessionals@gmail.com**





# Shameless Plug ALERT!

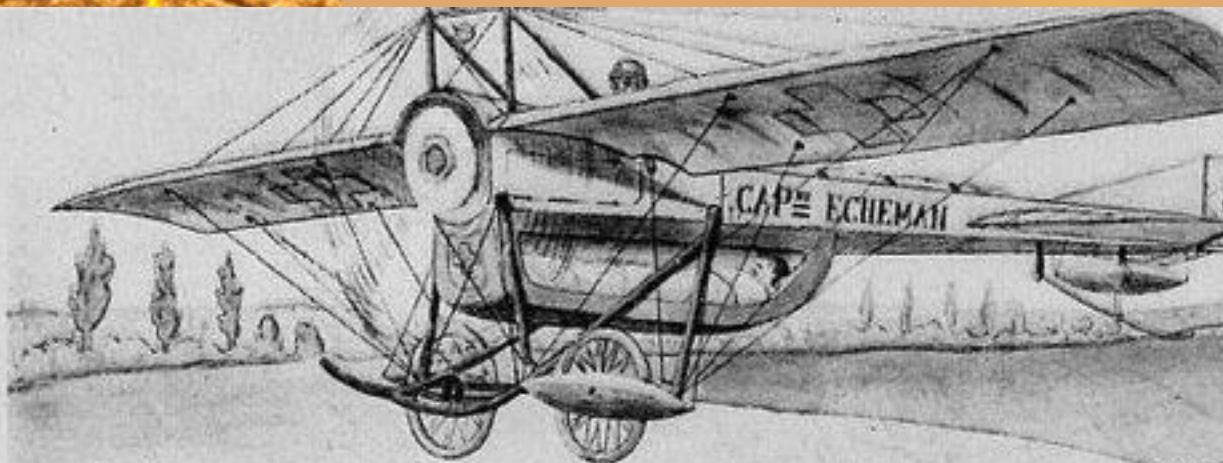


## EMERGENCY MEDICAL RESPONSE

### ^ VISION

The Emergency Medical Response Special Interest Group of WADEM exists to foster collaboration among scientists and practitioners with an interest in research, education, management and practice in prehospital, transport, emergency and / or disaster health care.

### ∨ OBJECTIVES



## Projet du 1<sup>er</sup> Avion - Ambulance .



Cabine blindée FACULTATIVE,  
en fibre de bois, mica et  
aluminium qui pourrait  
servir aux COLONIES, pour  
le transport des cas urgents  
dans la plus parfaite forma-  
tion sanitaire.

au profit d'un  
Hôpital, à Marvingt  
Infirmière de la Croix-Rouge  
L'œuvre - L'œuvre de la  
jeune aviatrice



Ce projet est né, qui est  
un projet, mais il est simple et  
simple, en temps de guerre, il la réalisera des engagements de France et ses transports, en cas d'urgence, de chirurgiens, de  
cas urgents et de cas urgents de secours. Ce en les secours des ambulances ne peuvent aller, l'œuvre de la Croix-Rouge,  
premier, par la télégraphie sans fil, les y dispenser  
En cas de cas de la Croix-Rouge, en cas de cas de secours militaires qui seront les premiers de  
l'œuvre, tous les secours et de tous secours, si possible, des secours immédiats.  
En cas de cas de secours militaires pourra également être les premiers.

Reproduction d'une aquarelle de 1911, représentant le 1<sup>er</sup> avion sanitaire de Marie MARVINGT  
la première Aviatrice infirmière de l'air qui en a passé commande en 1912





Hommage à ma Colonne  
de l'Association de - 187  
Médaille de Mérite  
E. Fianl  
1914



## Marie Marvingt, The Air Ambulance

by Emile Friant

<http://perso.wanadoo.fr>

download at [750pixel](#) image

En 1914, un dessin d'Emile Friant, peintre et président fondateur de l'Aéro-Club de l'Est, paraît dans bon nombre de journaux et de revues représentant ce nouveau-né, l'avion-ambulance. On y découvre Marie Marvingt assistant un médecin militaire, qui donne ses soins à un blessé. En second plan on voit un avion sanitaire, le «Capitaine Echeman», prêt à s'envoler avec le blessé à son bord.

In 1914 Marie Marvingt enlisted in the French Army and served on the front lines as a male infantryman, a red cross nurse and by 1915 was serving as a volunteer pilot flying bomber missions over Germany. Between the wars "The Bride of Danger" worked as war with French Forces in North Africa.

During this time she was also devised for skis for air ambulances working in Morocco and Algeria and apparently, for a time in a school in Morocco teaching skiing on sand dunes. In 1934/35, with this activity still in existence

Marie Marvingt devoted the remainder of her long life to her dream of 1910, the concept of aeromedical evacuation, giving more than 6000 lectures and seminars on the subject at least four continents. She was Co-Founder of the French Friends of Medical Aviation organization and one of the leaders behind the success of the First International Congress on Medical Aviation, 1929.

On January 30, 1955. Marie Marving received the award from the National Federation of Aeronautics at the Sorbonne, for her work in aviation medicine, established civil air ambulance service in Morocco and was awarded the Medal of the Peace of Morocco. In 1955, at the age of 80, Marie Marvingt flew in a US jet, and reportedly broke the sound barrier (not verified - Ed).

Marie Marvingt died, December 24, 1963 at the age of 88, the most decorated woman in the history of France, with more than 34 medals and decorations.

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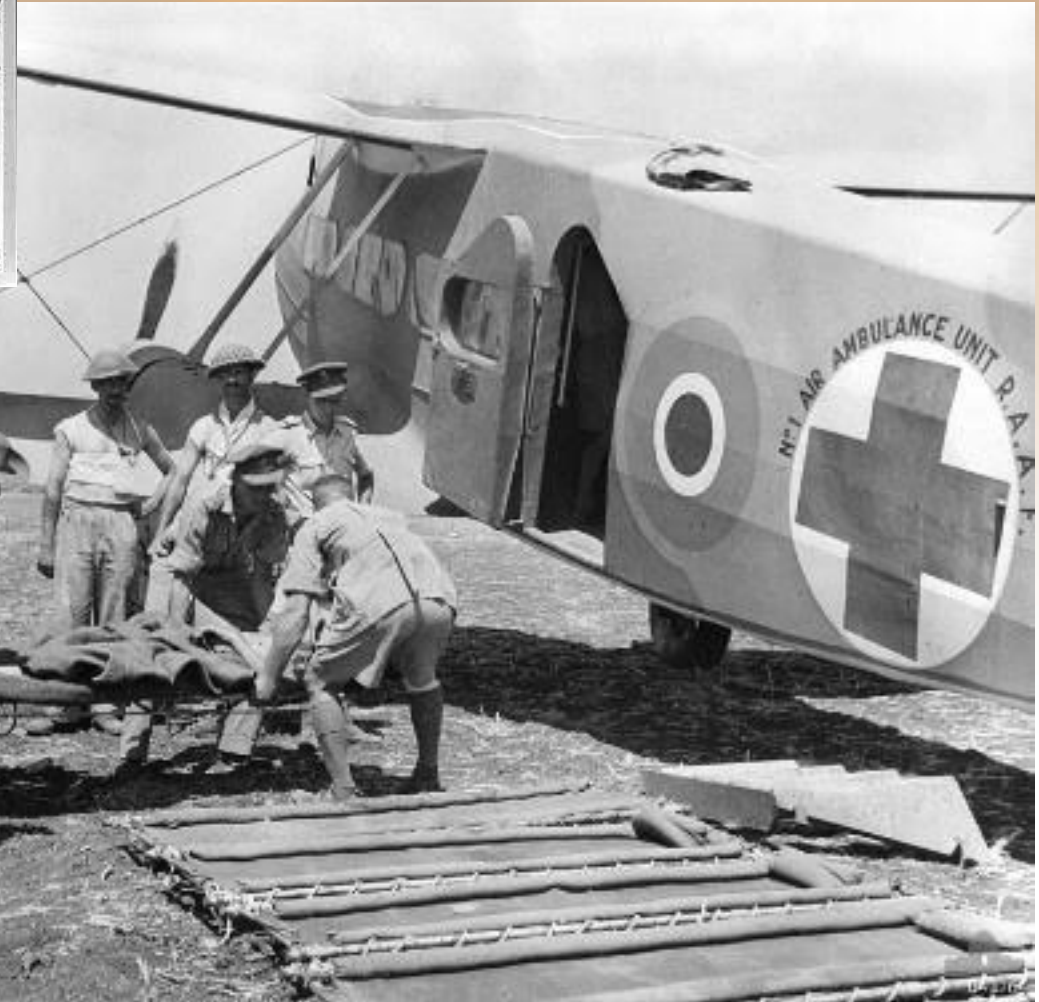


If you are in trouble anywhere in the world, an airplane can fly over and drop flowers, but a helicopter can land and save your life.

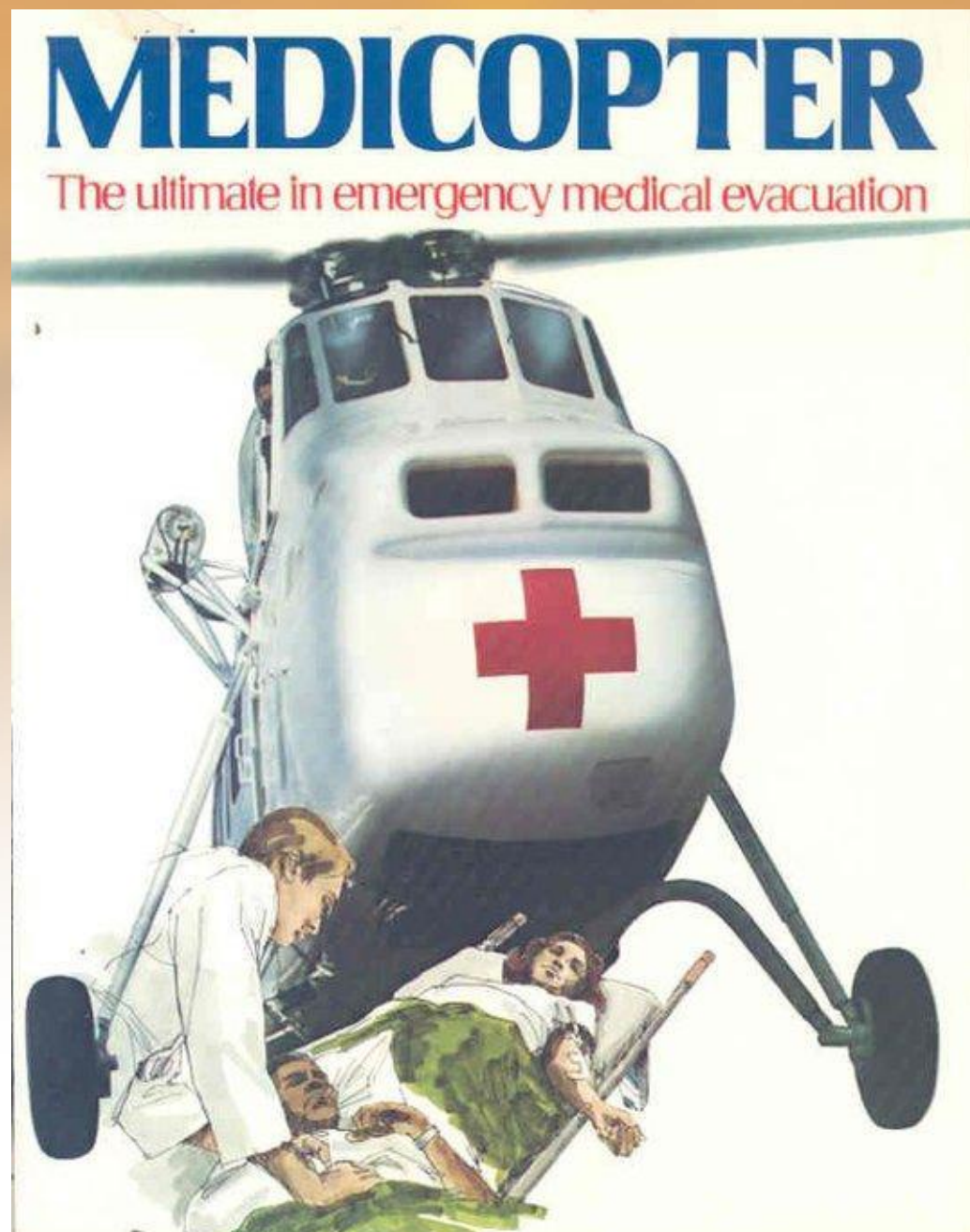
— *Igor Sikorsky* —

**AZ QUOTES**









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Royal Flying  
Doctor Service

90  
YEARS



Royal Air Force added 5 new photos.

19 February 2017 · 🌐



Today marks the 100th anniversary of the first aeromedical evacuation. Please join us in saying a big thank you to the RAF's flight doctors, flight nurses, flight paramedics and flight medics, Regular and Reserve, past and present, who have served in this life saving role.

On 19 February 1917, Lance Corporal MacGregor of the Imperial Camel Corps became the first injured serviceman to benefit from an aeromedical evacuation. Having been shot in the ankle as his unit advanced towards Bir-el-Hassana in Egypt, it was felt that his best chance of survival was to be flown to the nearest medical facility in El Arish - a journey by land that would have taken two or three days.

This short trip by air in the observer's seat of a Royal Flying Corps B.E.2c biplane marked the start of a service that has saved countless lives over the past 100 years.

Images courtesy of the Air Historical Branch (Royal Air Force).



# Remote Rescue





# TransContinental



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**REASONS TO FLY**

**Specialty Care**

**Resource Limited**  
**Areas**



# Specialty Teams / Mission Profiles

Neonatal / Pediatric

Search and Rescue

High Risk OB

Medically Fragile: ECMO, etc

Etc... These are just a few examples of some of the specially evolved roles



# Resource Limited Areas

Military Forward Operations  
CSAR, Guard, etc

Moving Patients From Battlefield to Civ-Land

Rural/Remote (SW USA / RFDS)  
Helping Patients Access Specialty Care  
(CFOH, etc)

Children's  
Flight  
of Hope







# Individual Roles

## Often Determined By Team/Mission Profile

Pilots: (SPIFR, TPIFR, FW, RW)

Paramedics

Nurses

Respiratory Therapists

Physicians

Nurse Practitioners (e.g: Neonatal)



# Individual Roles

**Often Determined By Team/Mission Profile**

**Unless Remote:**

THEN , Often  
We MUST Be Generalists!  
(Manning Issues)

RFDS (Midwifery, etc)  
Rural America





*Raising the Bar in Medical Transport Worldwide*

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# **The Right Stuff:**

## **What Does It Take To Fly?**

**Military: 500 Hours AirCrew Training, etc  
Several Years Experience In:**

**Critical-Care,**

**Emergency Medicine,**

**And/Or**

**Specialty Practice (NICU, HROB,**

**Wilderness, etc)**

**Many Certifications, both Medical and  
Trauma**

**Board Certification, either as a Generalist  
and/or Specialty**

**RW: Weight**





# **The Right Stuff:**

## **What Does It Take To Fly?**

**Attitude = Altitude!**

- 1. Proactive not Reactive... Ahead of the Aircraft..Ahead of the Patient!**
- 2. Team Player is a MUST... No Room for Personality Conflicts either at altitude or with critically ill, medically fragile patients!**

**Air Crew Coordination: Medical Crew Eyes for Pilot, Likewise Pilot helps coordinate patient care (flight profile, pax, etc...**

**Three to Go, One to Say No! (Weather Briefings, etc)**



# The Right Stuff: Follow On Training

- **Air Crew Coordination**
- **Air Frame Specific**
- **EPs: Emergency Procedures**
- **Wilderness Survival**
- **Water Egress**
- **Water Survival**
- **Hoist operations**
- **Etc**

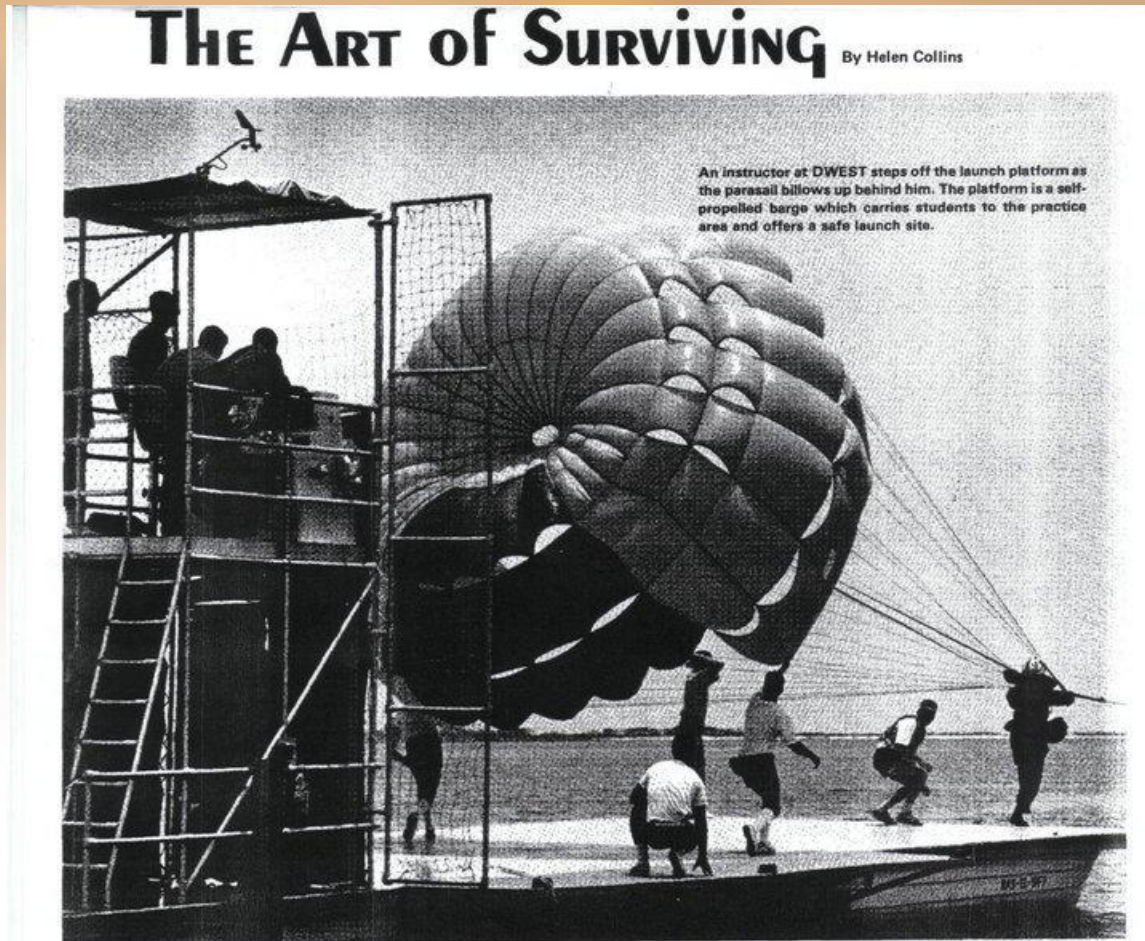




# The Right Stuff: Follow On Training

- Air Crew Coordination
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- EPs: Emergency Procedures
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- Etc

# The Right Stuff: Follow On Training



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# The Right Stuff: Follow On Training



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# **The Right Stuff: Follow On Training**

**Maintaining Certifications/Skills**

**Low Volume High Technical**

**Maintaining Proficiency**

**(Daily Intubations, ICU/OR Rotations)**

**Refresher Training**

**(Survival, etc.)**





# Common Misconceptions

- 1. We are NOT: "Heroes", "Angels", "Top Guns" etc!**
- 2. We do NOT Race against Time, Death, The Grim Reaper, etc!**



# Common Misconceptions

**We are NOT: "Heroes", "Angels", "Top Guns" etc!**

**Utterly NO place for Arrogance or Hero Worship!**

**We are ALL standing on the shoulders of giants and work together as a team for our patients and our profession... PLEASE don't call us heroes... OR think that you are going to be a hero if you fly!**

**Learning /Process Improvement NEVER End!**



# CONCERN Network

## CONCERN Network

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## Frequently Asked Questions

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### 1. What is the CONCERN Network?

Begun in 1984 by the National Flight Nurses Association (now, the Air & Surface Transport Nurses Association) as a simple telephone tree, the CoOperative Network Call for Emergency Regional Notification was envisioned as a mechanism to alert the air medical community of situations in which crewmembers had been injured or killed in helicopter or airplane crashes. In the ensuing twenty years, CONCERN has evolved through various incarnations to serve as a means of collecting and distributing information about a variety of air medical and critical care ground transport mishaps.

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### 2. How does CONCERN work?

CONCERN is a voluntary process by which air medical / critical care ground transport operations may issue a bulletin to notify their colleagues regarding a variety of mishaps and/or tragedies. When a reportable event occurs, contact is made with CONCERN, located in the Flight For Life Colorado Communications Center in Denver, by the affected operation's administration via telephone, email, or now, the CONCERN website. Specific details are collected and then formatted for a bulletin that will be sent to members of the CONCERN email list.

Before a bulletin is finally issued, a critical step is a confirmatory telephone call that is made by the communications center to the affected operation. The communications specialist will seek to validate both the intent of the operation to issue the bulletin and the information sent. This is to insure that bulletins contain information authorized and verified by the operation's administration.

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### 3. What events merit a CONCERN bulletin?



# Common Misconceptions

**We do NOT Race against Time, Death, The Grim Reaper, etc!**

**FAILING TO PLAN IS...PLANNING TO FAIL!**

**SLOW IS SMOOTH  
SMOOTH IS FAST**

**AHEAD OF THE AIRCRAFT  
AHEAD OF THE PATIENT**

**PLAN FOR BOTH  
ANTICIPATE WHAT CAN GO WRONG  
MIDFLIGHT...Backups to the Backups!**



# Sobering Thoughts:

## The 25 Documents You Need Before You Die

Design Your Death Dossier Soon—or You Could Be Setting Up Your Heirs for Frustration and Financial Pain

- Marriage license
- Divorce papers

Marriage and Divorce

- Personal and family medical history
- Durable health-care power of attorney
- Authorization to release health-care information
- Living will
- Do-not-resuscitate order

Health-Care Confidential

Proof of Ownership

- Housing, land and cemetery deeds
- Escrow mortgage accounts
- Proof of loans made and debts owed
- Vehicle titles
- Stock certificates, savings bonds and brokerage accounts
- Partnership and corporate operating agreements
- Tax returns

Life Insurance and Retirement

- Life-insurance policies
- Individual retirement accounts
- 401(k) accounts
- Pension documents
- Annuity contracts

Bank Accounts

- List of bank accounts
- List of all user names and passwords
- List of safe-deposit boxes

The Essentials

- Will
- Letter of instruction
- Trust documents





# **Additional Thoughts:**

**Stressors of Flight**

**Self Care**

**Work Life Balance**

**PTSD**



# Future Directions:

- **ECMO to Go etc. (Smaller Equipment)**



# Future Directions:

- **ECMO to Go etc. (Smaller Equipment)**





# Future Directions:

- VTOL Aircraft (Proving Igor WRONG!)





# Future Directions:

- **Pilotless Aircraft (Battlefield/Beyond)**
- **Humanitarian / Charity (Remote Access, especially Trauma.)**





**AYITI AIR ANBILANS**





# High Flight

Oh! I have slipped the surly bonds of earth,  
And danced the skies on laughter-silvered wings;  
Sunward I've climbed, and joined the tumbling mirth  
Of sun-split clouds, --and done a hundred things  
You have not dreamed of --Wheeled and soared and swung  
High in the sunlit silence. Hov'ring there  
I've chased the shouting wind along, and flung  
My eager craft through footless halls of air...  
Up, up the long, delirious, burning blue  
I've topped the wind-swept heights with easy grace  
Where never lark or even eagle flew --  
And, while with silent lifting mind I've trod  
The high untrespassed sanctity of space,  
Put out my hand, and touched the face of God.

**John Gillespie Magee, Jr**



**Questions, Comments, Concerns?????**



**The Emergency Medical Response  
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**Thank You.... Thank You Very  
Much....!**

**[criticalcareprofessionals@gmail.com](mailto:criticalcareprofessionals@gmail.com)**