" MEMORABLE MOMENTS FROM 38 YEARS OF TEST PILOTING FOR THE FAA"

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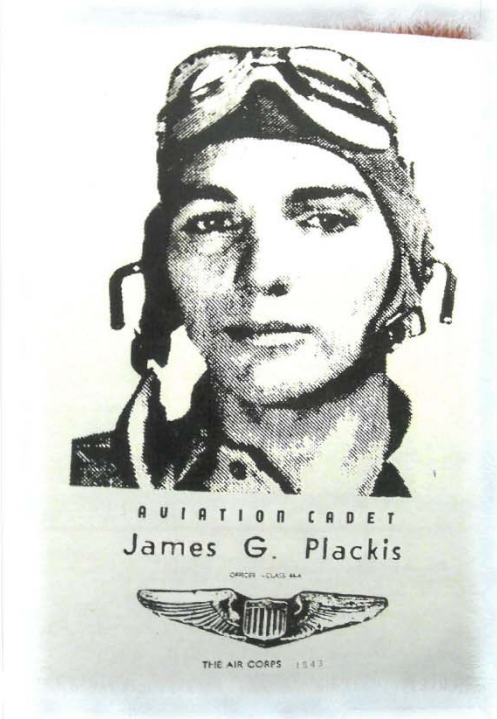
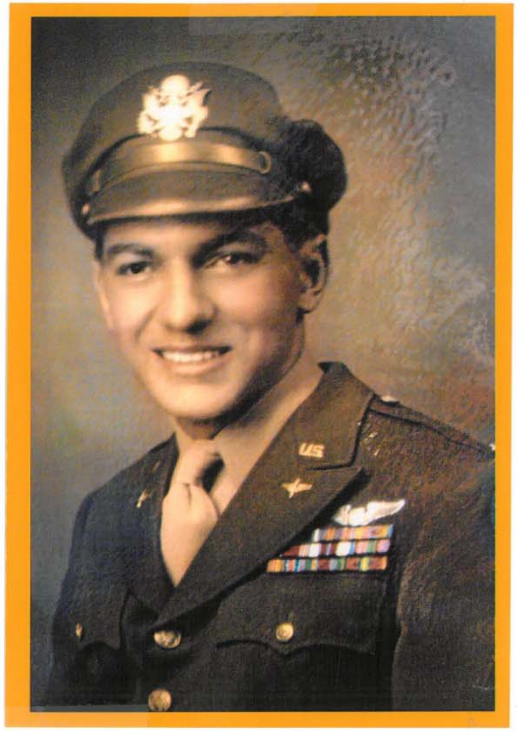
GLIDER, BALLOON, FLIGHT ENGINEER, 24 ATP TYPE RATINGS

THE HUMBLE BEGINNINGS OF 70 YEARS ON THE STICK AND RUDDERS, IN 1943





FAA Certification Flight Testing

It's all about safety

Flight testing is a branch of aeronautical engineering that develops and gathers data during flight of an aircraft and then analyzes the data to evaluate the flight characteristics of the aircraft and validate its design, including safety aspects. The flight test phase accomplishes two major tasks: 1) finding and fixing any aircraft design problems and then 2) verifying and documenting the aircraft capabilities for government certification or customer acceptance. The flight test phase can range from the test of a single new system for an existing aircraft to the complete development and certification of a new aircraft. Therefore, the duration of a flight test program can vary from a few weeks to many years.

From Wikipedia

"A test pilot is an aviator who flies new and modified aircraft in specific maneuvers, allowing the results to be measured and the design to be evaluated. Test pilots may work for military organizations or private, (mostly aerospace) companies. Testing military aircraft, in particular, is regarded as the most challenging and risky flying conducted in peacetime. In the 1950s, test pilots were being killed at the rate of about one a week, but the risks have shrunk to a fraction of that, thanks to the maturation of aircraft technology, better ground-testing and simulation of aircraft performance. . . . . ."

From Wikipedia

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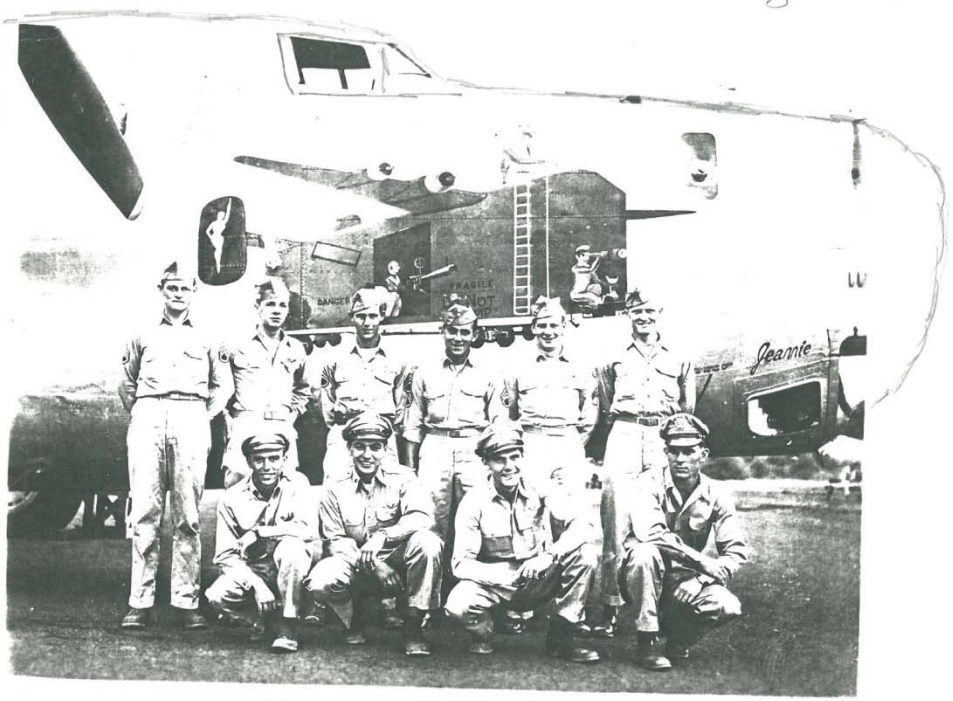
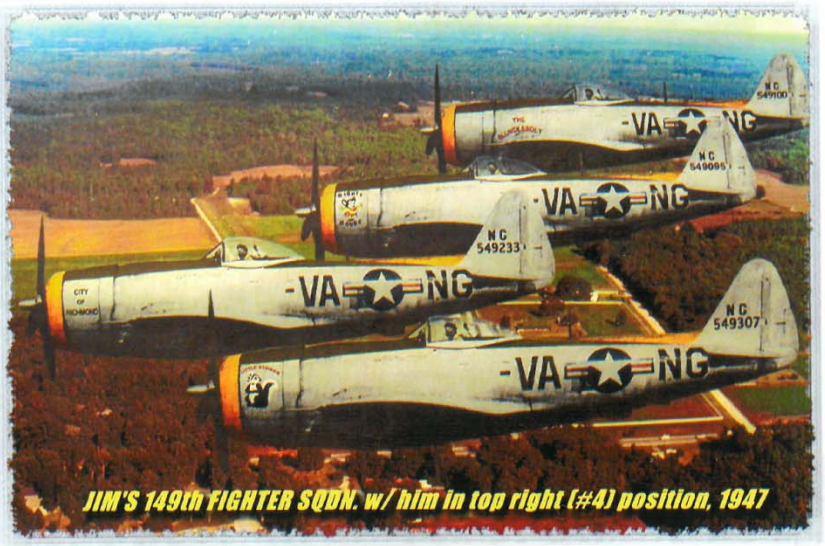
The "Flying Boxcar" (No. 44044749) and its crew of 10.
June 1944




Jim's WW-II Combat Medals

THE POST-WWII YEARS, AS A FIGHTER PILOT IN THE VIRGINIA AIR NATIONAL GUARD:



The Key Players:

A. The Applicant

B. FAA

I. Program Manager and Project Engineer

II. Aerospace Engineering Specialists

III. Manufacturing Inspectors

IV. Test Pilots

V. Flight Test Engineers/Flight Analysts

VI. National Resource Specialists

VII. Aircraft Evaluation Group

VIII. Managers, Directorate and ACO

THE FIVE KEY SAFETY THEMES:

A) There shall be no features or characteristics present in the aircraft that could make it unsafe [FAR Part 21.21(b)(2)].

B) Operating Limitations shall be established for the extremes of atmospheric variable factors [FAR Part 23.45 & 23.1501].

C) All Operating Limitations and other information necessary for safe operation of the aircraft must be made available to the pilot and crew members in a definitive manner [FAR Part 23.1501, 23.1541 & 23.1581].

D) It shall not require exceptional skill, alertness or strength on the part of the pilot, nor exceptionally favorable conditions, in order to perform a smooth transition from any flight condition to any other condition, nor shall there be any danger of exceeding the approved limitations, including the limit load factor [FAR Part 23.141 & 23.143].

E) All required systems, equipment and installations must perform their intended functions accurately, reliably and safely under any foreseeable condition or operation, with no significant interference or degradation. [FAR PART 23.1301 & 23.1431]

ACCOUNTING FOR THE DOZEN KEY VARIABLES:

A) Day & Night Illumination, Internal and External
B) The VFR, IFR & Icing Environments
C) Aircraft Configurations
D) Range of Weights
E) Range of Centers of Gravity & Limiting Load Factors
F) All Anticipated Pitch, Roll & Yaw Attitudes
G) Range of Airspeeds & Redlines
H) Range of Powers & RPM's
I) Range of Takeoff, Cruise & Landing Altitudes
J) Range of Operating Temperatures
K) Impact of Headwinds, Tailwinds & Crosswinds
L) Accuracy & Reliability of All Systems, Equipment & Installations

FAA Risk Assessment and Risk Management:

A. Safety Review Board
B. TIA Issuance
C. Conformity Inspection
D. Weight and Balance
E. Configurations
F. Experimental Limitations
G. Weather Conditions
H. Test Area
I. Fuel Loading
J. Ground Station
K. Chase Aircraft
L. Means of Communication
M. Landing Sites
N. Emergencies, Responses, and Rescuing
O. Safety and Survival Equipment
P. Medical Airworthiness
Q. Flight Test Plan
R. Pre-Flight Briefing
S. Flight Cards
T. TIA and AFM Test Limitations
U. Assessment of Test Predictions
V. Build-Up Approach
W. Post-Flight De-Briefing
X. Lessons Learned

(9)

THE BOEING CH-46 (BV-107), PRIOR TO OUR BURNING IT UP

THE OMEGA BC-12D, PRIOR TO THE LOSS OF CONTROL THAT PUT US UPSIDE DOWN, 50 FEET FROM A FUEL TRUCK

SOME MEMORABLE MOMENTS

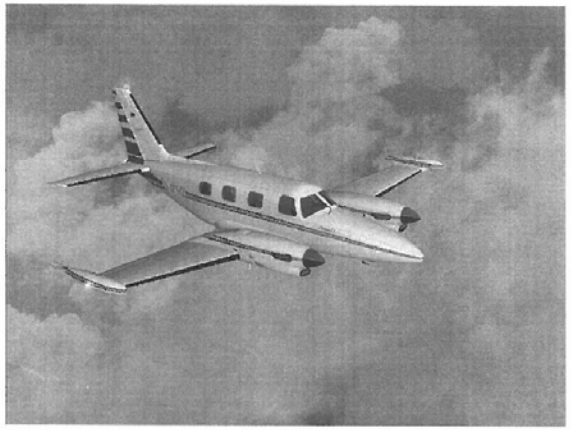
Crashing/Trashing the BV-107 II (CH-46)

Crashing/Trashing 1st Twin-Piston Helic.

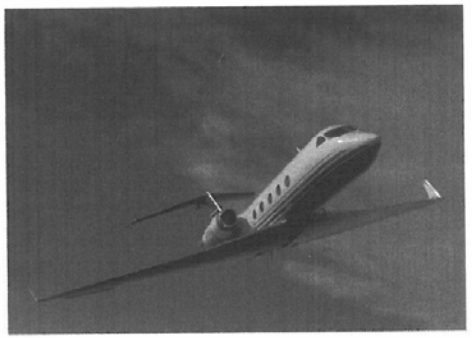
Cessna 420 Fatal Crash, Allentown

Canadair CL-600/601 Loss of Prototype

Piper Cheyenne I (PA-31T)
Divergent Phugoid Oscillation



Gulfstream III Damage: Lightning Strike



Double Flame-Out, Sikorsky S-61R (CH3C)

Sinking the Sikorsky H-34 (S-58)

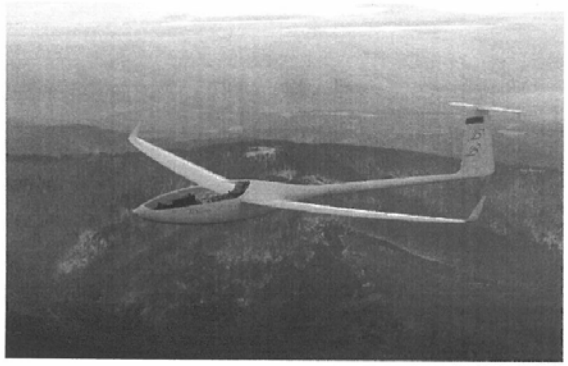
Piper Twin Comanche Stabilator Damage: Flutter

Spin-Testing C-182 Floatplane at Night

B-707, 1,000 ft Below Limits at Thule

Autorotation to 1.1xVne at Night (A-109)

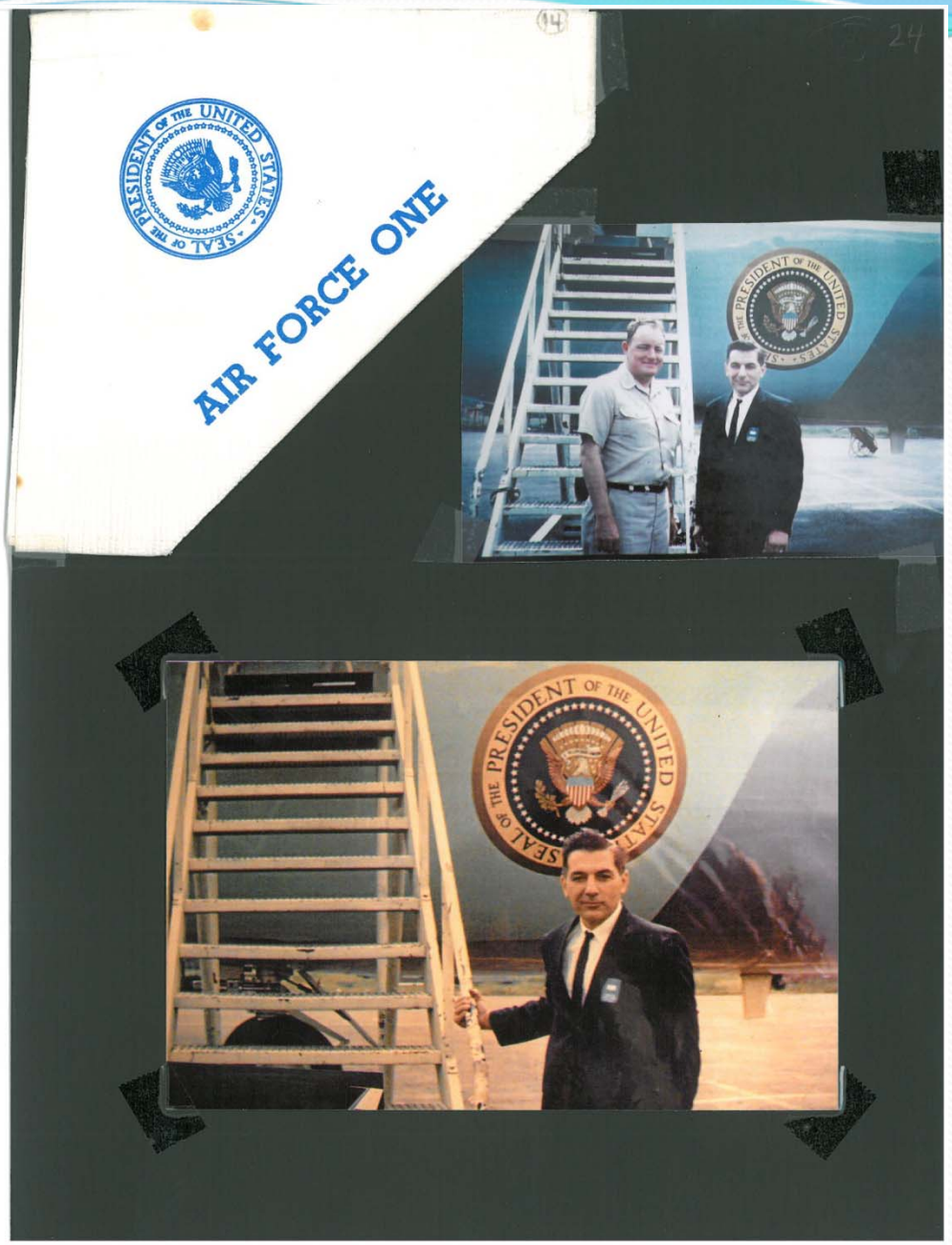
Sailplane Soaring (1-35)



Testing Hot Air Balloons

Gulfstream IV, "N-1"

Gulfstream 159 (G-I)


AIR FORCE ONE

Questions? Comments?