

ABSTRACTS – 2018 INTERNATIONAL SYMPOSIUM, SALT LAKE CITY, UTAH

rance refining plant retooled entirely for aviation war fuel in the 1940's with M. J. Trumble's sons quietly employed there.

Abundant legacies are held with aviators surviving in numbers who are grateful for the fuel that brought them home. Nurturing one strata of petroleum heritage are restorers of warbirds who focus on vintage fuel and mechanical systems. They poetically preserve the basics of early flight on the backs of dragons, blowing smoke and soaring airborne via earthly carbon. Some fly until 'heading West' for the last time, captivating eager crowds who admire their precision at air shows. Two groups recognized for showmanship in aviation preservation are the Lima Lima Flight Team and AeroShell. Their pilots say they rebuild these aircraft and fly them simply because they can.

As history inevitably throttled ahead, aviators saw early 1950's aerospace fuels gain prominence with boosters. Legendary afterburners shortened terrestrial runway and carrier jet takeoffs. Solid fuel then lifted rockets from launch pads as thrusters aided rocket and missile navigation at Aerojet and Rocketdyne. A resourceful ace pilot who lived until 2010 aided aviation and aerospace progress, and then applied his broad knowledge to help build the world class Chino Air Museum in Southern California. Colonel Bud Mahurin also contributed to the Smithsonian and World War II Air Museum in Palm Springs whose motto reads simply: **Preserve – Educate – Honor**. Aviation and aerospace retirees respectfully park their legacies at these hallowed California grounds in growing numbers, and also at the Aerospace Museum in Downey where Mahurin contributed as well. For any flyover in American aviation and aerospace petroleum history, these repositories and multi-generational family stories offer engaging history.

**CODE BINGO:
HEADING HOME ON THE BACKS OF DRAGONS**

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POSTER PRESENTATION

A pilot's utmost concern crackled through the air when Code Bingo was radioed between aircraft during the Korean Conflict. Triple war ace Colonel Bud Mahurin described Bingo Fuel as enough av gas for an aircraft in formation to return safely. He wrote it was the pilot who had reached this limit, not his jet burning upwards of 900 gallons per hour. Mahurin's

Honest John autobiography supplied an aviation leader's perspective through one who endlessly studied fuel and systems to maneuver tactical advantages in ways that earned him the nickname of 'the Chief.' In the heart of war, high volumes of fuel dispensed for applications on land, sea and air sealed the non-negotiable pact for men and women on missions to return home. By 1943, America and its allies anchored technical superiority with a determination made famous in a John Wayne movie and then a song about making it home, *on a wing and a prayer*.

GIVE WINGS TO YOUR LETTERS!

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POSTER PRESENTATION

Aviation petroleum history includes U. S. Airmail when visionaries aimed to improve the country's mail speed connecting coasts. Stories of early 1900's aeroplane gasoline involved rattling prop machines that choked or ran out of gas, but were coaxed along by farm mechanics and risk-taking aviators. Army-trained pilots became available to carry mail. Heroes died attempting flight deadlines in foul weather where fuel was no match for altitude or weather. Airmail investors refused to relent despite Congressional debate, detractors and railroad-invested naysayers. Between 1910 and 1918, headlines announced key firsts to anchor the notion of racing against trains to fly mail faster than rail transport. Airmail was first carried successfully across the Allegheny Mountains between New York and Chicago. Cash and letters then flew regularly beyond the Rockies into San Francisco day and night. Mirroring the invention of petroleum itself was the stubbornness of American airmail pioneers succeeding with early aviation fuel.