



AMA Chapter #3798

Chino Valley Model Aviators Official News



Merry Christmas Members

December 20, 2020

Volume 23 Issue 12

www.chinovalleymodelaviators.org

"To create an interest in, further the image of, and promote the hobby/sport of radio controlled aircraft"

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Quote of the Month:

"But for the P-40, the Japanese would have come all the way to Australia."

Gen Henry "Hap" Arnold.

Support our Local Hobby Shop

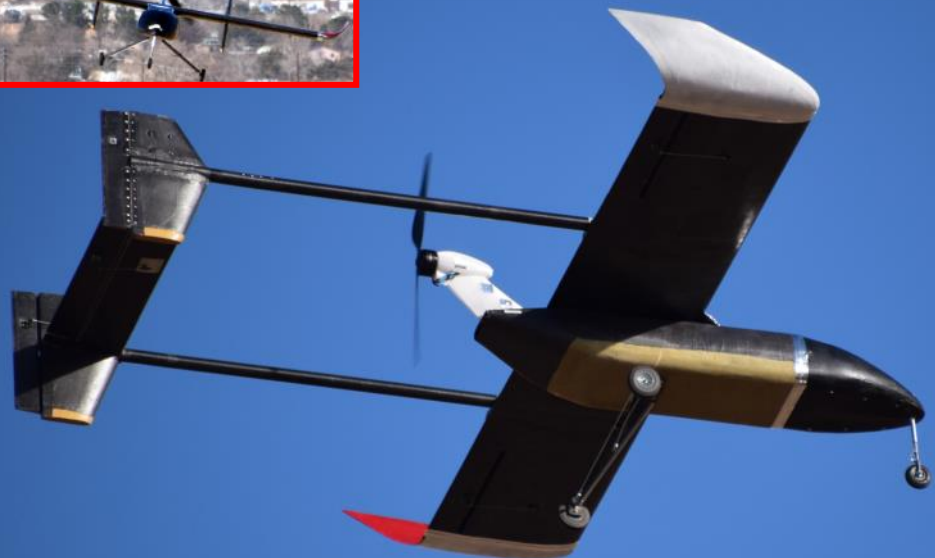


Valley Hobby
Prescott Gateway Mall

Don Ferguson's VTO X-520 Can Also Be Landed Vertically



Embry-Riddle's UAV/UAS Tested at Our Field



ERAU's recent UAV/UAS test flight at our field was a success. See pages six and seven.



Bill Gilbert: CVMA President's Message



I hope everyone is enjoying the holiday season and the coming of winter with the cool weather we have been having.

As most all of you know, we normally have a Christmas Banquet and no member meeting in December. This year, with the heightened concern over rising Covid-19 cases, we cancelled the Christmas banquet out of caution. We will bring you this abbreviated newsletter to help stay in touch over the holiday season.

We have had a fun year at the field despite the health precautions we have had in place with social distancing. Our meetings at the field due to the loss of the airport meeting room were a blessing in disguise; we enjoyed the sunshine outdoors and room to spread out-keeping us healthy.

We enjoyed several fun events at the field that were new to us this year; the e-warbird races and the delta wing event. Low cost aircraft for the event led to good club par-

ticipation. We'll try and repeat this coming year. We had several BBQ meals at the events that were enjoyable-more to come next year.

And, we hosted our first IMAC event for the SW Region. The flying and the attending aircraft were spectacular. Our field was liked so well that we are on the calendar for another event in 2021! We will add to our activities and make it an even better event than last year. This event brings in some impactful funds for the club.

We appreciated and enjoyed the generosity of several members that made it possible to have a "Fire/ Crash cart" with rough terrain suspension and water bottles for retrieving crashes and putting out fires. Our field safety and convenience took a giant leap.

We were also blessed by, and extremely appreciative of, the generosity of several members that donated a plethora of RC items to the club. The sale of those items bolstered our finances this year;

putting the club in a nice financial position to be able to make improvements to the facility if so desired.

We've had some great maintenance of the field too, with a beautiful mowed runway area to fill our view. And well-kept accoutrements as well. Kudos to our VP and everyone that has helped out with work days!

Hopefully every one of you will continue to enjoy our hobby during the season, even if in a reduced fashion due to holiday events, family, and weather.

We have a great club in CVMA, let's stay involved for an even better 2021!

Bill



CVMA Flight Instructors

- Steve Shephard
Chief Flight Instructor
- Al Marelllo-basic
- Lloyd Oliver-basic
- Riley Harley-basic
- Jack Potter-gliders

CVMA NEWSLETTER

AMA Chapter #3789
Published Monthly

President — *Bill Gilbert*



Vice President — *Doug McBride*



Treasurer — *Harold Ellis*



Secretary — *Bob Steffensen*



Safety Officer — *Rick Nichols*



At Large Member — *Dan Avilla*



At Large Member—*Dennis O'Connor*



At Large Member *Mark Lipp*



Newsletter Editor — *Bob Shanks*



WHAT AIRCRAFT HAS THIS COCKPIT?



See Page Ten



2021 — MARK YOUR CALENDARS

May 22 - Spring Fling Fun Fly & Swap Meet

June 12 - E-warbird Races

June 24 - Delta Wing Combat Event

July 4 - Pot Luck Fun Fly & Chino Valley Fireworks (watch them from our field)

Aug 20-21 IMAC Southwest Region Shootout Held at our field.

Sept. 25 Annual Steve Crowe Memorial Fun Fly

Oct 23 Fourth Annual Build & Fly Challenge

Dec 3 Annual Christmas Banquet



BORN IN A BARN ?

IF YOU ARE THE LAST ONE TO LEAVE THE FIELD CLOSE & LOCK THE GATE.



SAFETY IS AN ISSUE FOR CHRISTMAS TOO!

By Rick Nichols, Club Safety Officer

Happy end of the year holidays to you all or depending on when you read this, happy first of the year holidays. This month, a little Christmas safety you may want to think about while putting up your Christmas tree, holiday lights and decorations.

While decorating your tree be sure to hang tinsel one strand at a time. This will ensure that you do not connect one light socket to another therefore causing a direct short and creating a fire hazard.

To avoid your tree drying up and the possibility of a house fire be sure to keep plenty of liquid in the base of the tree. I like to use the cheap booze that I receive as gifts for this purpose. This will ensure that you will have a Happy Tree.

While wrapping presents do so while wearing a pair of medium to heavy pair of gloves. These can be purchased economically at Harbor Freight and Tool at the *Frontier Village Mall*. Doing so will save you a lot of money buying bandages and first aid supplies to repair the damage done to your hands from paper cuts. Paper cuts can be very painful.

If you receive Glo-Fuel for a Christmas gift be careful not to confuse it with the booze you have been using to keep your tree happy. Glo-Fuel is much more expensive and should not be wasted on your tree.

After Christmas, your tree will start to dry out, or shall we say, "go on the wagon"? This is the time to

throw the tree out of the house as nobody likes an Old Drunk Trunk. Seriously now, I hope you have a joyous and safe holiday season. Hopefully 2021 will be a better year for all.





Don Ferguson's Twin

Members' Cool Planes



Clint Manchester's German WWII FW-190.



Bob Shanks P-39



Randy Meathrell's Radian



Jim Scott and his high wing Model it flies well.



Members,
We have limited assembly table space for our nearly 140 members so try to remember to keep the top of tables clear for those coming to assemble their planes. Use the second shelf or put your gear on the ground under the table or out away from the tables so others can use them.

2020: A Weird Year: So Here's in Keeping with This Strange Year Interesting Data on the UAP/UFO Phenomena ✿

Editor's Note:

We have to all admit this has been one of the strangest years world wide so in keeping with this "weirdness" here's some data on the UFO/UAP phenomenon. Hey they are flying!



The Five Observables for Unidentified Aerial Phenomena

1. Sudden and Instantaneous Acceleration

Objects moving in such a manner that they are capable of maneuvering suddenly, deliberately and sometimes in the opposite direction. In some cases, these maneuvers involve a change in direction and acceleration that is well beyond the healthy limitations of any biological system, that we are aware of, to withstand. The anticipated effects of these g-forces on material may even defy our current technological ability to manufacture.

Gravity, inertia and g-forces are mitigated by these objects with an overwhelming loss of mass-equivalent, i.e., light pumped through their mass. Call it "anti-gravity", inertial mass reduction or whatever. You can even start out by thinking about as using light for "thrust" and increased momentum. I went through that stage, too. In any case, ultimately the objects are floating in propelling light bubbles around a moving planet and its gravitational field, which accelerates mass. So a biological entity within should feel like they are sitting in a La-Z-Boy chair literally watching the world go by. "Opposite direction", as used here, is almost meaningless. What's "anticipated" are materials that are not directly interacting with air or water, and therefore remain unaffected by their associated inertia, friction, drag or gravity. Air and water each have light moving through them, as do the unidentified objects which exploit that plentiful and readily-available resource.

2. Hypersonic Velocities Without Signatures

Objects that are traveling well above supersonic speeds and yet leave no obvious signature behind. Specific signatures normally include acoustic, heat, and electromagnetic and are traditionally recognized as a sonic boom, vapor contrails, and atmospheric ionization. Currently, even the world's most advanced military and reconnaissance aircraft have detectible signatures.

The signatures for ambient light-pumping have apparently been detected but seemingly not recognized, i.e., "glowing auras" and "cold light" spheres.

3. Low Observability

Regardless if the object is being viewed electro-optically, electromagnetically, or through the naked eye, the inability to gain a clear target picture remains elusive. Descriptions by witnesses are often difficult to describe, while radar returns often come back nonsensical or even jammed. Objects generally appear opaque and semi-metallic in nature, both on camera and live. In many cases it is nearly impossible to actually see the object and instead reports often include what is seen "around" the object.

4. Trans-medium Travel

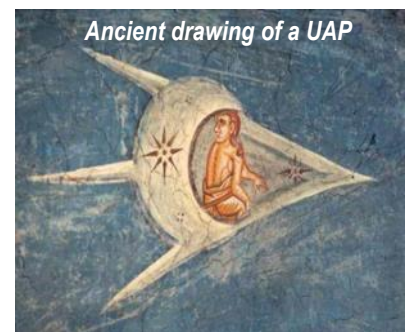
Objects that have the ability to travel easily in various environments and conditions seemingly without any change in performance capabilities. Our current understanding of physics requires vehicles to be designed specifically according to their application. For this reason, there are stark differences between those vehicles that orbit in space, fly in the atmosphere, and travel in the sea. Objects that can travel in all three mediums using the same design and without compromising performance or degrading lift remains an enigma.

5. Positive Lift

Objects that are apparently resisting the natural effects of Earth's gravity, yet without the normally associated aerodynamic means for lift and thrust. These objects have no obvious signs of propulsion (engines, propellers, exhaust plumes, etc.) or flight surfaces (wings, rudders, ailerons, fins, etc.), but yet they are able to move in a very precise manner in our atmosphere despite not having any of those characteristics.

Conclusion

Your editor has never seen one of these UAP/UFO phenomenon but as stated above this has been a weird year, maybe we will see one near our flying field before this very strange 2020 comes to an end!



Embry-Riddle Aeronautical University, Prescott Campus Advanced Design Class Flight Test Conducted at Our Field



Embry-Riddle's Aeronautical University (ERAU) advanced aeronautical design class conducted a test of this semester's project at our field November 23. One of our community outreach activities is supporting ERAU's efforts in UAV/UAS design activities. Their efforts are all very advanced student aeronautical designs. The one major requirement is the class must use standard aircraft materials like carbon fiber, aluminum as well as other standard aircraft material (they don't use balsa or other similar RC materials). Many of the ERAU students are avid RC enthusiasts as well, their design competition is all by and for students of course.

In the past a few our club members have been asked to visit the fabrication lab on campus as they proceed in their building to offer suggestions and this is much appreciated. In our club we have retired aeronautical engineers, pilots, mechanical engineers, some many have extensive military backgrounds as well consisting of aircraft design and development with a host of interesting aviation experiences.

The students have access to a variety of wind tunnels on campus, so they progress through very realistic design, test and build parameters. In the past some of their designs have flown very well, some have not [but the learning curve is high and that is of course the goal](#). It is always nice when the final design flies well. Our only stipulation is that the student pilot of the UAV must be an AMA member, many of the students are of course as they have their own small runway on campus for student use. Their designs are usually much too big and heavy to test on the campus runway. This year's design weighed in at 70 pounds and flew well after much tinkering and adjustments to the landing gear.

Motor and Battery Specs

Motor: T-Motor U13II 130KV, 5600W power at full throttle

Battery: Turnigy Graphene 12000 Mah 6 cell, 15C constant / 30C burst discharge, connected in series for an output of 44.4V at 12S and total capacity of 12000 Mah



Student Ricky Dixon sets the prop ready for flight.



Taking it out to the runway.

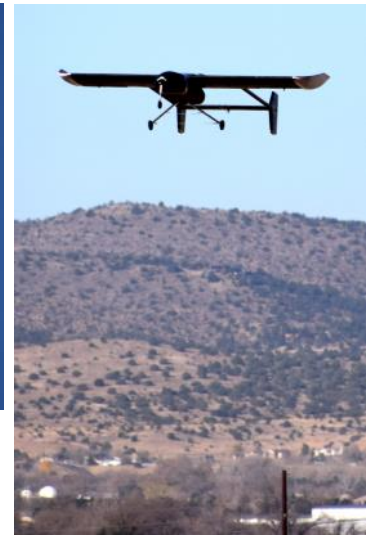


Students all wore brightly colored safety vests.

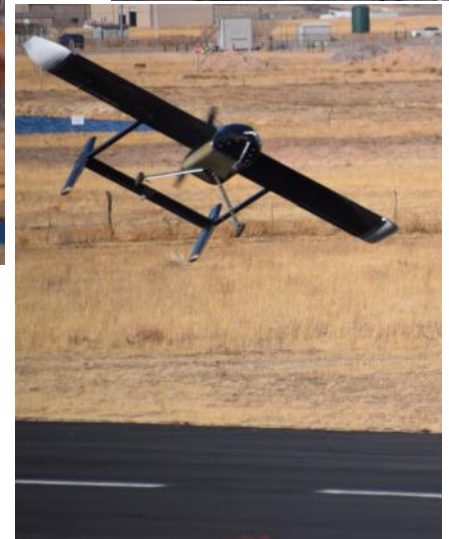


Ready for take off.

More ERAU Test Flight Photos



Cross wind landing underway.



The landing was just a little shy of the runway but level.



Student's retrieve the aircraft after a successful flight test.



ERAU student Ricky and wife Cassi Dixon's kids Gabriel left and Hyrum look to be future aviators also.

Whose Drone...Northrup Grumman or Lockheed?

By Bob Shanks

Last month we ran these two photos of a suspected US Air Force Drone but I was immediately taken to task by *Randy Meathrell*, our resident and retired Lockheed-Martin aeronautical engineer. As you can see the larger photo clearly shows the Lockheed Skunk Logo at the nose of the aircraft that was not covered in the article and it looks very much like the inset flight photograph flying over California recently.

So the question we have to ask is "Whose drone in the high altitude photo is this in reality?" Is this what has been depicted in leaked media as the Northrup Grumman drone or is it in reality a smaller version of the supposedly classified and under development the SR-72 or is it something else from Lockheed, perhaps a highly classified penetrating ISR capability Air Force officials have frequently called for and requested as a need but there has been no public evidence as yet, perhaps this fleeting high altitude photo inset is an indicator. It certainly looks like the Lockheed photo at right but reports say it's the Grumman RQ-180. Hard to impossible to verify due to the classified nature of the project.

According to the "Slashgear" article used as one source, (web site is below); "...Test flights of the RQ-180 for the US Air Force are said to have already begun, with operations estimated to be underway since 2013, and contracted with manufacturers Northrup Grumman as early in 2008."

The RQ-170 Sentinel widely used by the Air Force today is built by Lockheed Martin Corp and first put into operation back in 2007, the RQ-170 is believed to have a wingspan of about 90ft. The Lockheed RQ-170 was possibly used for the 2011 raid on Osama bin Laden's compound in Pakistan, which killed the al-Qaida chief."

This article goes on to say the "RQ-180 is only the first of a new line of super-stealth, high-speed hardware the US government is investing in" However, the Lockheed Martin Corp. is already working on a new "Son of Blackbird"

hypersonic jet, which could potentially travel three times the speed of existing fighters, and be equipped with light weapons for raids. The Mach 6 jet, codenamed the SR-72, would be unmanned like the RQ-180 drone, though Lockheed plans to also use the hypersonic technology on missiles as a testbed of sorts. They were to be operational by 2018, though the SR-72 itself – if it gets the green-light overall – is unlikely to be ready for some years after that according to this article and other sites.

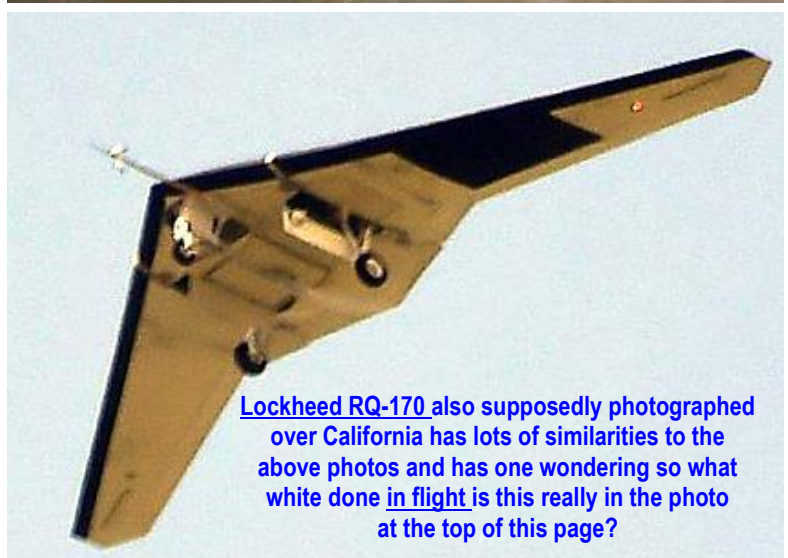
The Slashgear article also points out "Whether that green-light will be given depends in no small part on budgetary considerations. Lockheed has been attempting to use off-the-shelf parts for the design, it's said, in an attempt to minimize expensive custom components, including a combined turbine and scramjet-engine system to drive the craft to hypersonic speed. The Mach 6 top speed was selected as a compromise between performance and the demands for tougher shielding and other materials, too, though Lockheed still declines to say how much it envisages any final jets actually cost".

There could be a lot of "joint" development possibly going on between companies, this is not totally unheard of especially in these days of super secret drone research. Checking multiple "open source" sites often can give one a general idea of what's being developed but one has to be careful at what conclusions one reaches. We are still basically an open society and that also makes us quite vulnerable to cyber crime conducted by China, Russian and other countries who consider the U.S. an enemy.

A big thanks to *Randy Meathrell* for pointing out the Lockheed "Skunk Logo" in the photo above. Your editor overlooked that rather interesting clue that makes for all kinds of possible predictions and interesting conversation. I will keep checking "open sources" too and keep membership informed. We are living in a very interesting aviation and space research environment.



Is the inset the RQ-180 or a Lockheed mystery aircraft here?



Lockheed RQ-170 also supposedly photographed over California has lots of similarities to the above photos and has one wondering so what white done in flight is this really in the photo at the top of this page?



Eject - Eject The Evolution of the Ejection Seat

By Don Hollway

<https://www.historynet.com/punching-evolution-ejection-seat.htm#>

If necessity is the mother of invention, combat is its father. Little more than a month after Pearl Harbor, when the United States was belatedly gearing up for war, Germany was already testing jet fighters. In January 1942, Heinkel company test pilot Helmut Schenk flew a He-280 prototype with four pulse-jet engines. They didn't provide enough power for takeoff, so the Heinkel was tethered to an He-111 tow plane. Unfortunately, that kicked up so much snow that when Schenk reached 7,900 feet and the bomber crew dropped the heavy towline, it remained frozen to his jet. Flying, let alone landing, was impossible, but luckily Heinkel was also working on another innovation. "I jettisoned the canopy and then pulled the release lever for the seat," Schenk recalled, "and was thrown clear of the aircraft without coming in contact with it." A blast of compressed air fired him, seat and all, out of the cockpit. He landed unharmed via parachute, the first man to escape an aircraft using an ejection seat.



Almost since airplanes started flying, people have been figuring the quickest way to get out when they fail. Bungee-cord and compressed-air escape systems date back to the 1910s. By September 1941, the Germans were test-firing dummies from the back seat of a Junkers Ju-87. Early ejection seats had difficulty just clearing the Stuka's tail fin. As aircraft speed and required ejection power increased, air bottles became impractically heavy; instead the He-162 jet's seat used a gunpowder cartridge. It's thought some 60 Luwaffe pilots ejected during the war, but how many actually survived is unknown.

The first test of an ejection seat was from the rear gunner's position in a Junkers Ju-87 in 1941 according to History dot Net Archives. In Britain, during an emergency landing in a fighter prototype he co-designed with Irish engineer James Martin, test pilot Captain Valentine Baker was unable to bail out in time. Martin took his partner's death so hard that he repurposed their company toward aircrew escape. In July 1946, Martin-Baker employee Bernard Lynch ejected from the rear cockpit of a Gloster Meteor 3 at 320 mph, and eventually made 30 more successful ejections. "From an engineering point of view," company spokesman Brian Miller said decades later, "the ejection seat was developed quite quickly, and we were able to soon come up with the velocities and accelerations that we needed to clear an aircraft fin. The problem was that nobody knew what those accelerations would do to a man."

Early Martin-Baker seats might save your life, but could also end your flight career, as reflected by aviator slogans "Meet Your Maker in a Martin-Baker" and "Martin-Baker Back Breaker." Within a year, however, the ejection seats were standard equipment in British jets. That saved the life of test pilot Jo Lancaster, who on May 20, 1949, punched out of an Armstrong Whitworth A.W.52 flying wing, the first British emergency ejection.

On August 17, 1946, Sergeant Larry Lambert earned the Distinguished Flying Cross by ejecting from a modified Northrop P-61 over Wright Field, Ohio, at 302 mph. American aviation manufacturers all hurried to design ejection seats. Within 10 years, however, aircraft were capable of such speeds that seats could barely keep up. In February 1955, North American Aviation test pilot George F. Smith took a factory-fresh F-100A Super Sabre on a check flight and suffered total hydraulic failure at 37,000 feet. By the time he was down to 6,500 feet, out of control, the "Hun" was doing Mach 1.05. On ejection the wind forces amounted to a 40-G deceleration, knocking Smith unconscious. Though a third of his chute was torn away, it deployed automatically.



A Gloster Meteor T.7 test-fires a Martin-Baker ejection seat.

Counterintuitively, it's at zero airspeed and altitude that seats require the highest power, because the aircraft is not moving away and parachutes need enough height to open. Rather than relying on gunpowder charges, "zero-zero" seats began using rockets to extend the acceleration and reduce spinal injuries. The first zero-zero test subject was Doddy Hay, whose Martin-Baker seat fired him 300 feet from the ground in 1961. In late 1965, American manufacturer Weber Aircraft produced a zero-zero seat with a rocket motor, gun-deployed parachute and survival kit, including an inflatable raft. U.S. Air Force Reserve Major Jim Hall volunteered as guinea pig, and on firing was subjected to a sustained 14 Gs. Hall landed in a nearby lake, emerging to shrug, "I've been kicked in the ass harder than that." Today Martin-Baker alone counts more than 7,500 lives saved by their ejection seats, including over 3,300 Americans.

COCKPIT OF THE ENDEAVOUR SPACE SHUTTLE

<https://www.nasa.gov/centers/kennedy/shuttleoperations/orbiters/endeavour-info.html>

Authorized by Congress in August 1987 as a replacement for the Space Shuttle orbiter Challenger, Endeavour (OV-105) arrived at Kennedy Space Center's Shuttle Landing Facility on May 7, 1991, piggy-backed on top of NASA's new Space Shuttle Carrier Aircraft.

For the first time, an orbiter was named through a national competition involving students in elementary and secondary schools. They were asked to select a name based upon an exploratory or research sea vessel. In May 1989, President George Bush announced the winning name.

Endeavour was named after a ship chartered to traverse the South Pacific in 1768 and captained by 18th century British explorer James Cook, an experienced seaman, navigator and amateur astronomer. He commanded a crew of 93 men, including 11 scientists and artists.

Cook's main objective, tasked by the British Admiralty and the Royal Society, was to observe the Transit of Venus at Tahiti. This reading enabled astronomers to find the distance of the Sun from the Earth, which then could be used as a unit of measurement in calculating the parameters of the universe.

Cook's achievements on Endeavour were numerous, including the accurate charting of New Zealand and Australia and successfully navigating the Great Barrier Reef. Thousands of new plant specimens and animal species were observed and illustrated on this maiden voyage. Cook also established the usefulness of including scientists on voyages of exploration.

Space Shuttle Endeavour embodies similar experiences. Its first launch, the STS-49 mission, began with a flawless liftoff on May 7, 1992, beginning a journey filled with excitement, anticipation and many firsts.

One of Endeavour's primary assignments was to capture INTELSAT VI, an orbiting, but not functioning, communications satellite, and replace its rocket motor. Unfortunately, the Space Shuttle wasn't designed to retrieve the satellite, which created many repair challenges.

The project sparked public interest in the mission and NASA received a deluge of suggestions on possible ways for the crew to grab onto the satellite. It took three attempts to capture the satellite for repairs to be made. An unprecedented three-person spacewalk took place after the procedure was evaluated by the astronauts and ground team.

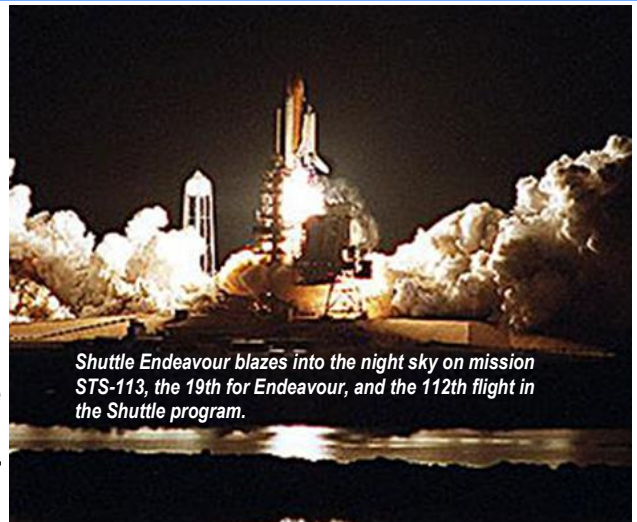
Between rescue attempts, the STS-49 crew was busy with a variety of activities. They conducted medical tests assessing the human body's performance in microgravity, and recorded footage for an educational video comparing Cook's first voyage on Endeavour with the Space Shuttle orbiter's maiden voyage.

Once the new motor was attached, it propelled the satellite into the correct orbit, providing a relay link for the equivalent of 120,000 two-way simultaneous telephone calls and three television channels.

This was the first time four spacewalks were conducted on a Space Shuttle mission and one of them was the longest in space history, lasting more than eight hours.

The crew also took part in the Commercial Protein Crystal Growth experiment. The research tested the production of protein crystals grown in microgravity.

OV-105 became the first Space Shuttle orbiter to use a drag chute during a landing -- only one of many technical improvements made to Endeavour. Just as James Cook set the standard with his seafaring Endeavour voyage, the Space Shuttle Endeavour missions have continued to uphold and surpass the standards set by its namesake, more than 200 years later.



Shuttle Endeavour blazes into the night sky on mission STS-113, the 19th for Endeavour, and the 112th flight in the Shuttle program.

