

Hangar Happenings for July, August and September 2022

Rotorheads



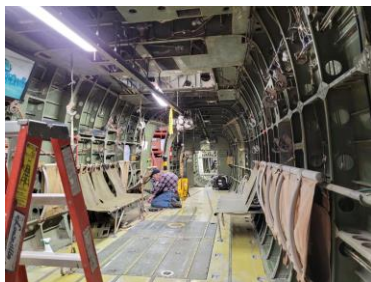
Frank Robinson 1930-2022

It's good to be back at the keyboard putting together another issue. Restoration work at the museum has been kind of dry for the third quarter of 2022. We did, however, get some work done on the Mojave and Phrog as well as many things done in other areas, including an unusual number of tours. Before I continue, we received the sad news the Frank Robinson passed away on November 12. We consider



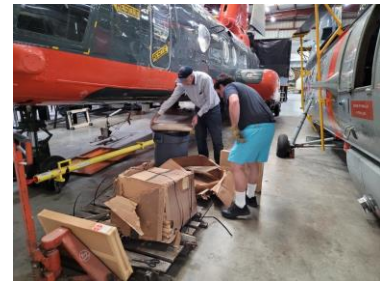
Robinson Helicopters

Frank a modern day helicopter pioneer. I will send more information in the next issue or separately when we receive it.



Working on the Mojave seats

The Sikorsky CH-37 Mojave had work done on the cabin troop seats. The seats are original and very fragile, requiring careful work. We received windows for the 37 and an engine hoist rig for the P&W R2800 from



Receiving new H-37 windows



Hoist rig with engine

Pratt & Whitney. The windows are wrapped and set aside for future use. The engine hoist rig was cleaned and painted then hung above the engine. It is specifically designed to lift the R2800 to the required position to mount them in the H-37



Cleaning the engine hoist rig



R2800 hoist rig

engine pods. The rig is made to mount the left engine or the right engine each of which have different placements in their respective pods. The mounting rig will be an invaluable tool for the Mojave restoration.



New Phrog battery

The Boeing Vertol HH-46E Sea Knight received a new maintenance free sealed lead-acid battery, which is on the work bench now. I'll talk more about it in the next issue. The forward transmission area and cowlings were



Checking the 46 transmission



New Mil Mi-26 model



Lending 46 parts



Securing the forward cowling

inspected and cleaned. We loaned some critical H-46 parts to the National United States Armed Forces Museum in Houston, TX.



Mi-24 Hind model



Civil 235 and military H-47

Other project action took place with the model room, more pictorial displays, the video game and the gift shop. The **Model Room** has new Mil Mi-



Northrup MQ-8B model

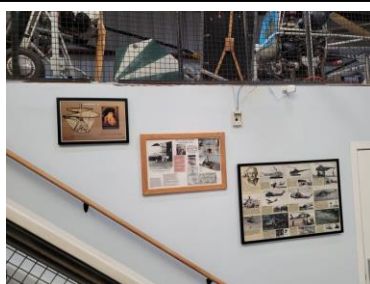


Leonardo da Vinci and Screw

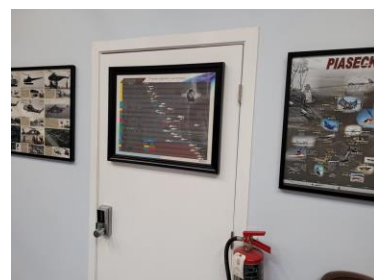
24 and Mi-26 models in the Russian section. The Mil 26 is the largest helicopter in the world which is clearly evident in the display, and the Mil 24 the classic Hind. Two new occupants in the 1/72 show cases are the Boeing civil 235 and military H-47 nose to nose for comparison. Outside of the display cases are two beautiful new Northrup MQ-8B drone models in Navy and Coast Guard colors donated by the Western Museum of Flight. In the wings for the Model Room is a model of the Boeing 297 HLH heavy lift helicopter. We have over 270 models on display, and there is a short Model Room video at the end of this Happenings. New **Educational Pictorial Displays** include a framed collage of Leonardo da Vinci and his Aerial Screw displayed alongside pictorials of the Goodland Flying Machine, the first patented rotary-wing flying machine, and a historical collage of Igor Sikorsky. New pictures have been placed on the



Boeing 297 HLH model



Leonardo, Goodland, Sikorsky



Sikorsky helicopter timeline



Piasecki HRP 1 and 2 pictures

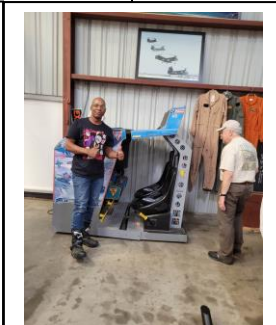
Pioneers Wall including timelines of Sikorsky and Boeing Vertol helicopters and pictures of the Piasecki H-16 and HRPs 1 and 2 during shipboard trials as well as some unique Hiller and Kaman pics. The helicopter **Video Game** is up and running 100% after



Hanging pioneer displays



Replacing connector



Video game working



Gift Shop pioneer video

replacing some electrical connectors. It is quite popular with our young (and some older) visitors. The **Gift Shop** has a new feel with the addition of a constantly running helicopter history video where guests can relax while watching helo history in action. Some significant

Donations this period include the MQ-8B drone models, a hole press tool from the Flying Leathernecks

and a proposed 18 ft long Mil Mi-24D Hind from the Western Museum of Flight; the Hind to arrive at a future date.



Sorting donated parts



MQ-8B models loaded to move



Hole punch loaded to move



Upper deck temp sensor



Gift shop temp readout



Tour at the Roton Rocket



Tour at the Helipod

Infrastructure work included a temperature sensor and new sewer pump. It gets quite hot on the upper display deck in the summer, so a sensor was placed there with dual readouts in the gift shop for the top floor and the gift shop. We pride ourselves on the condition of our restrooms, which we have separate for men and women including disabled access. Our sewer pump failed, requiring replacement including cutting a new sewer plate cover.

We had an unusual number of **Tours** this time including visitors from England and Germany. I have included a few pictures here to give you an idea. Some other **Miscellaneous** happenings this time were a fire near the airport with the Fire Huey dumping water on it and the HTS (Helicopter Transport Services) Skycrane fire bomber was stationed on the tower ramp along with their fuel truck. Also went by the USS Midway restoration yard on North Island to take a picture of the Vought F7U Cutlass which they will be restoring.

For history this time we're going to look at some early helicopter speedsters.



18 ft Mi-24D Hind model



Cutting a sewer plate cover



Installing new sewer pump



Tour at the HUK



Tour inside of the HH-46E

Helicopters are not go-fast machines. Although the blade tips approach supersonic speeds, it's just not possible to get the rest of the machine much faster than about 180 knots due to aerodynamic phenomena of retreating blade stall and advancing blade compressibility. This has

not stopped designers and engineers from seeking to push helicopters past 200 kt with such aircraft as



Huey fire bombing at airport



Vought F7U Cutlass



Bell Boeing V-22 Osprey



Bell 533 compound

the Sikorsky S-97 Raider and the Bell Boeing V-22 Osprey. Two early attempts were the Bell 533 and Sikorsky S-69 (XH-59 military designation) ABC compound helicopters. The Bell 533 was a high speed helicopter based on a highly drag-reduced Huey airframe, including removing the stab-bar and incorporating a variable tilt rotor mast, from 1962 to 1969. Further modifications included 3 and 4-bladed rotor systems, two fuselage mounted turbojets and wings enabling the 533 to break 200 kt in 1964, the first helicopter to do so, and with more powerful turbojets 274 kt in 1969. It is on display at the Army Museum at Fort Eustis, VA. The Sikorsky S-69 ABC (Advancing Blade Concept) was a coaxial rotor high speed helicopter test aircraft which feathered the retreating blade to avoid blade stall with the lift only produced on the advancing blade. When two turbojets were attached to the fuselage it was able to achieve a speed of 263 kt. The ABC concept was played ahead to the Sikorsky X-2 in 2008 and S-97 in 2015. The S-69 is on display at the Army Aviation Museum at Fort Rucker, AL.

In September of 1959, Igor Sikorsky states, "The helicopter is probably the most versatile instrument ever invented by man. It approaches closer than any other to fulfillment of mankind's ancient dreams of the flying horse and the magic carpet." We hope you had a great Thanksgiving and

want to wish you and your families the very best for the holidays fast approaching. Before the holidays hit us, hop on your personal flying horse for a trip to the museum so you can see what we have been working on in person. We look forward to seeing you soon. Until then, stay safe and healthy, keep your turns up and always look for a safe place to land.

Chip out.

Short 2 min video of the Model Room

<https://youtu.be/6WB6YmsdTmk>

The Western Museum of Flight

<https://www.wmof.com/>



HTS Skycrane and fuel truck



Midway restoration yard



Sikorsky S-97 Raider



Sikorsky S-69 ABC compound