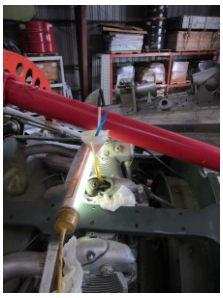
Hangar Happenings for July and August 2019

HRP MLG strut

HRP nose gear strut

Rotorheads,

The end of the summer has been kind of sparse people-wise with many out of town on travel. It has, however, been hot, hot, hot but work continues. Most of the work being done on the HRP, H-1N, the Helipod and Model Room as well as several side projects and infrastructure.



Oiling the HRP eng

HRP rear frame paint touch up

In Tandem Land, the **HRP Rescuer** main landing gear and nose gear struts were serviced. Considerable work had been done up to this point to get them in good working shape, but this was the first time in about 60 years that they had been serviced. So it was done slow and easy, but it looks like the strut cylinders are holding. The engine was pre-oiled with oil poured onto the engine main bearing, cam and crank shaft and Mystery Oil squirted into all of the cylinders. A lot of paint touch up work was also done. It has been about 5 years since the frame was initially painted so touch up was done on the rear pylon and engine compartment frame work. The **H-1N Huey November** is located on the other end of Tandem Land with much going on there. The main rotor head parts arrived, so sorting, organizing and inventoring these parts had to be done. The main rotor mast was set up in a work stand and accompanying parts were painted. The teetering rotor head was already beautifully finished so it was only a matter of inspecting it before it can be assembled atop the mast. The vertical fin tail rotor driveshaft cover was painted and installed and looking great. A new Vietnam era unit recognition poster was hung in the cabin making the Huey a great tour stop. Work continues on the **Helipod** rotor shroud. The shroud inside framework had been assembled but now it is necessary to construct a wall-work inside of the framework which has to be done from scratch.

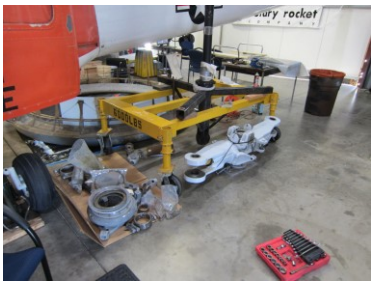
On other projects, the **R22 Raven** diorama was completed. This is our first diorama complete

Touching up HRP eng comp

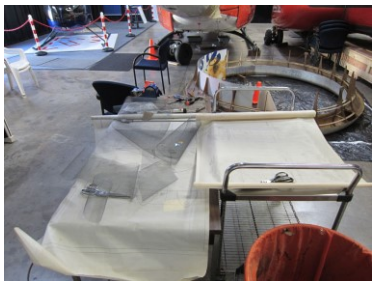
Huey parts organized & drying

Working on H-1N Huey head

Huey vertical driveshaft cover



Huey mast, head and parts



Helipod rotor shroud

Robinson R22 diorama

CH-53 tail rotor blade mount

Assembling 1/72 scale model

Pioneers Presentation in work

Giving Presentation at WMoF

Plating tank

with the helo sitting on a downtown Los Angeles rooftop landing pad, designer video with specifications placard and an extra-large company banner and hanging R66 banners. All of this makes the Raven a popular tour stop generating lots of questions and comments. A **CH-53E** tail rotor hub was constructed and painted. The purpose here is to make a CH-53E wall mounted tail rotor. The **Model Room** has been a big center of attention over this period with two new display cases cleaned, assembled and had casters mounted. Several dozen 1/72nd scale models have been mounted side-by-side to give viewers an appreciation of the relative sizes of helicopter types. While U.S. and other country helo types are in this section, a specific Russian helicopter section is being put together in the other case. Also, new U.S. pioneer initial flying helo section has been established in another display case including the Hiller XH-44, Sikorsky VS-300 and Robinson R22 with more to come. Around the four walls, all of the rotor system configuration and recognition posters have been hung including Igor Sikorsky's original patent application. In addition to being cooler temperature-wise than the rest of the museum, the Model Room is a very popular stop. Another big side project is the **Helicopter Pioneers Presentation** which continues to be tweaked and updated. The Presentation has already been given three times to different organizations in Ramona and was given to the Western Museum of Flight in August which was videoed. The Presentation video will be released on YouTube. We'll send you a link when it comes out. In the meantime, check out the WMoF website where they list upcoming presentation events at http://wmof.com/. Cindy Macha is the WMoF Director and coordinates an amazing list of lecturers for the museum.

Infrastructure work continues. There is always something to do besides cleaning dirt, dust bunnies and bird poop which is pretty much continuous. A small-part

Mounting display case casters

Scale models in display case

Sikorsky patent

WMoF Director Macha

New golf cart light

plating tank was made, a new light fixed on the golf cart, the Learjet battery was charged up and new machine press arrived. The Helicycle blades were tracked, blade boxes loaded on a trailer for movement and thousands of hydraulic parts were sorted.

All of this happened while tours took place. In airport areas adjacent to the museum hangar the firefighting Huey conducted long line training, a fixed-wing aircraft made an emergency landing and a C-130 fire bomber landed.

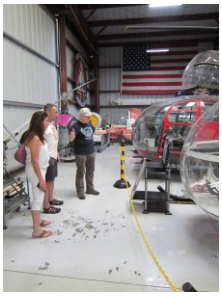
This time in helicopter history we'll take a slightly different approach and look at some significant power plant information. In July 1959 the FAA certified the General Electric T58 gas turbine as the first turboshaft for civil helicopter use. But, what came before and after? In 1931 the Wright R-1820 Cyclone radial engine was developed. The 9 cylinder radial engine produced 700 to 1500 HP depending on the model, measured 48 x 48 in and weighed 1000 to 1400 lbs. In 1937 Pratt & Whitney developed its R-2800 Double Wasp radial engine. The 18 cylinder engine produced 2000 to 2400 HP depending on model, measured 53 x 83 in and weighed a beefy 2300 to 2500 lbs. Both of these reciprocating engines were produced through the 1950s and used on numerous fixed and rotary-wing aircraft until gas turbine tech took their place. In 1955 the GE T58 was developed and built through the 1980s. The 10 stage axial flow gas turbine turboshaft produced 1200 to 1800 SHP depending on model, measured 16 x 55 in but only weighed 300 to 400 lbs. This was replaced in 1973 with the GE T700 turboshaft built through today. The combination axial-centrifugal flow gas turbine produces 1500 to 2600 SHP, measures 25 x 48 in and weighs in at 400 to 500 lbs. When gas turbine tech came on the scene, it represented a tremendous boon to helicopter development.

So hop into your personal reciprocating powered conveyance and motor to the museum to check out our engine collection including an R2800 and a cut-away R1820 and T58 and the aircraft that used them. Until then, in the words of Stanley Hiller, "It seemed to all of us that if we could make it, we could fly it." And, they did! Drive safe and we'll see you when you get here.

Chip out

Charging Lear Jet battery

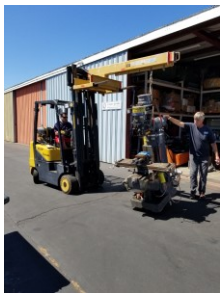
Sorting hydraulic parts



Tour at the H-12

P&W R-2800 18 cyl radial

GE T58 turboshaft engine



New press

Loading blade boxes

Coulson C-130 fire bomber

Wright R-1820 9 cyl radial

GE T700 turboshaft engine