

# Why Now?

The technology to do this experiment has only existed for the past ten years or so. Due to the increasing development of computer numerical controls in metal development technology and machining technology throughout the nineteen eighties and nineties, Harley-Davidson and the motorcycle industry in general, started reaching new heights in technological advancements. Some of these advancements could immediately be used on panheads and some had to wait to have products developed that would fit the panhead application. In some ways this experiment will demonstrate how computers changed the motorcycle.

The overriding reason this experiment is happening now and not before now is....nobody thought of it before and nobody tried it before...

God Bless America!



## CONTACT US

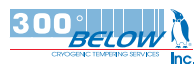
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# Sponsors

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# What is the 250 THOUSAND MILE EXPERIMENTAL PANHEAD ?

The Experimental Panhead is a real world experiment starting with an antique engine, a 1948 panhead, and building it with modern technology that is available for a panhead, mostly Evolution and Twin Cam technology along with a few other tricks. The goal is to see if we can make the Experimental Panhead engine go 250 thousand miles in the real world on American highways and perform as well or better than modern Harleys.



In the spirit of Harley-Davidson's founding fathers who believed longevity was the hallmark of a well-built machine— This experiment will be a true test of endurance. After forty-five years of research and development the panhead was the culmination of their life's work and was the last big twin any of the four founding fathers saw roll off the assembly line. The panhead is considered to be possibly the greatest and most beautiful engine Harley-Davidson ever built. This experiment will determine once and for all whether or not PANHEADS RULE!

# The Engine

ENGINE	1948 Panhead-Experimental
BORE	3.5 inches
STROKE	3.625 inches
DISPLACEMENT	70 cubic inches
HORSEPOWER	55

The engine build required absolutely the most skilled builder to accomplish a well trued and balanced crankshaft assembly as well as the highest quality engine assembly integrating a variety of highly technical processes and parts.

Special thanks to one of the worlds leading authorities on building antique Harley engines and experimental and specialty engines: Dave at East Bay American Motorcycles in Ennis Texas. *Thanks Dave.*



# Overview

These technological improvements along with chassis modifications by DJ's Cycle, fitment and machining by DPS Technologies and modern brake systems provided by King Danny Biglove makes us confident in our ability to make 250 thousand miles on this— A REAL PANHEAD. We believe this may have been the panhead the founding fathers would have built in 1948 if they had the technology. Add the cosmetic design of Inuendos Design Company and this panhead will still look good at 250 thousand miles. Third party oversight for this experiment is provided by RBR Maintenance, an aircraft maintenance company licensed by the FAA to insure the validity of this experiment.

## Technical Improvements over the stock 1948 panhead

### CRYOGENIC TREATMENT

Practically the entire engine has been cryogenically treated by 300 Below, the industry leader in the cryogenic treatment process. The improvements to wear qualities on hardened steel, cast iron and cast aluminum is one of the tools we are using to help us make our 250 thousand mile goal.

### OIL SYSTEM

We have accomplished an improved oil system by using an Evolution style oil pump with 4:1 gears to provide 50% more volume and pressure over a stock 1948 system and improved oil filtration by using an early Evolution spin on filter. Improved oil technology is provided by Schaeffer Specialized Lubricants 20/50 Synthetic V-twin racing oil.

### CRANKSHAFT ASSEMBLY

Beyond starting with good geometry the improvements we have over 1948 are... Evolution rods for improved rod angle over an already great rod angle and rod to stroke ratio... improved oil and oil delivery ... three hole crankpin ... improved metal technology ... Improved machining technology and cryogenic treatment. Add all of that to a well trued and balanced crankshaft and I believe we have a panhead crankshaft assembly that will go 250 thousand miles.

To keep down the vibration on the crankshaft we've mated the crankshaft drive side to a Karata primary belt drive that is connected to a Baker six speed overdrive transmission and a Karata final belt drive to have the smoothest drive train available for a panhead.

### PISTONS

Along with an improved rod angle with Evolution rods we will be using Twin Cam technology by using hypereutectic pistons. We have also cryo-treated the pistons and the 1948 cylinders to make our 250 thousand mile goal.

### VALVE TRAIN

The stock 1948 heads have been cryo-treated along with the rest of the valve train. We have begun with an Andrews "J" grind cam selected for it's good all around performance, moderate lift and for it's smooth arching lobe profile that offers smooth lift and set down of the valves and low impact on the valve train. The stock 1948 rocker bearing blocks, re-manufactured by Baisley Hi-Performance and matched with stock style rocker arms modified by Baisley to have roller tips to insure long life to make our 250 thousand mile goal.

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