Fatigue Test
of
8 Place 1999 Hanger, CWA H-frame
Poma Detachable Grip and Hanger

Performed by:

Poma of America, Inc.
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Grand Junction, CO 81505

September 1999

Test Hanger, Grip, and H-frame:

The test was performed using a Poma 8 place 1999 hanger (3052596), Poma Omega grip, and CWA Omega III h-frame.

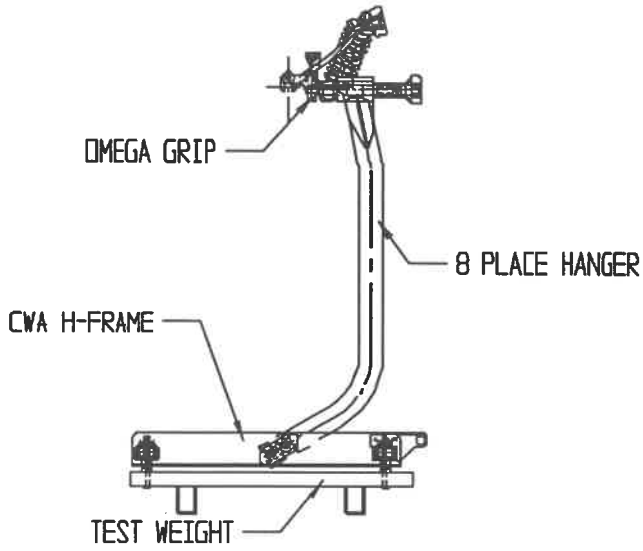

FIGURE 1

Excitation:

The Poma of America fatigue testing machine uses an eccentric (1/8" offset) shaft to oscillate a connecting rod and piston at ¼" total amplitude and variable frequency. The grip jaws are clamped to a Ø 1-5/8" (41mm) freely rotating round bar connected to the piston. This machine was designed to simulate a loaded carrier passing under compression sheave trains.

For the 8-place hanger and h-frame fatigue test, the testing machine was set to the following parameters.

Frequency:	9.9 Hz
Amplitude:	¼"

The frequency was based on a line speed of 1100 ft/min. and a distance between sheaves of 22 ¼".

Test load:

A test load of 2210 lbs (4076.820) was used to simulate a fully loaded cabin. The CWA cabin in an operational state, including fuel, fire extinguisher, etc., has a total weight of 851 lbs. The passenger load is 1360 lbs based on 8 passengers weighing 170 lbs each (ANSI B77.1.3.1.1.1). (See Figure 1)

The load was attached to the H-frame using the connection utilized in attaching the CWA cabin. The load was positioned based on center of mass of the cabin with 8 passengers.

Test Procedure:

The grip, hanger, h-frame assembly and test load are vibrated, by the fatigue test machine. Testing was stopped only as needed for repairs or maintenance. Testing was monitored every 1-2 hours (or as noted in the Data and Observations) during regular working days. In the event of an unscheduled stop of the test, the time was noted as the last verified observation of the test in the working condition.

Data and Observations:

- The test began on September 18, 1999 at 3:25 pm. The hanger was loaded and excited as in the procedures.
- Test stopped due to power outage. Last observed in an operational state 9/19/99 3:00 PM. Test restarted 9/20/99 8:00 AM
- Test stopped 9/25/99 8:00 AM after 5,117,310 observed cycles.

Post Test Observations:

The test hanger and H-frame including all structural bolts and connections were inspected and found to be sound.

The test hanger was non-destructive tested using Mag. Powder M28R5 Ancolor Red, Magnaflex Yoke Model Y7 AC/DC Pt No. 517750, Magnaflex Pie Gauge, and Universal Field Indicator. All welds and components were found to be sound.

Summary

The Poma 8 place 1999 hanger and CWA Omega III h-frame successfully completed 5,000,000 cycles simulating a fully loaded carrier passing compression sheaves at 1100 ft/min.