Winter Issue 2010

Team
VIBRATION TESTING EQUIPMENT

Vibration News

Weatherford

Written by Randy Birchell
Weatherford International

Weatherford International / Fort Worth Manufacturing Wireline Tools Go through Vibration Testing

Weatherford International / Fort Worth Manufacturing recently completed construction of their new Environmental Stress Screening Lab recently. The jewel of their ESS lab is their new dual actuator *Team* Vibration System. The new system allows the Fort Worth facility to perform both stress screening and design qualification vibration testing for their Wireline tools.

Weatherford Wireline tools are expected to perform under harsh vibration conditions from transportation to and from the well-site, handling and downhole operation. Weatherford research indicates that the number one cause of downhole equipment failure is associated internal connections that fail as a result of vibration.

The new *Team* vibration system allows Weatherford the ability to accurately simulate real life vibration conditions in the lab for new designs and validate manufactured product. Weatherford has already successfully used the vibration system to identify design and workmanship improvement opportunities. It is estimated that the savings from identifying and eliminating these defects through design and process changes will pay for the cost of the *Team* Vibration system in less than six months.

News from the UK

* * * *

CITEAN'S new *Team* Hydraulic Vibration System now operational. *Written by CITEAN*

*The Automotive Technological Innovation Center of Navarre has installed in its laboratories, a new **Team** electrohydraulic vibration system comprising a linear servohydraulic shaker and an expansion table.*

* * * * * * * * * * *

CITEAN of Spain has recently finished commissioning a new electrohydraulic system for conducting tests in higher frequency ranges than conventional hydraulic actuators, without thereby losing force and displacement capacity. This system allows vibration tests to be performed on a large number of components.

The following shows the technical specifications of the system:

Dynamic Force	**35kN**
Maximum dynamic displacement	**100mm**
Peak speed	**1, 98 m/s**
Maximum frequency	**500 Hz**
Maximum acceleration (g's)	**14, 11, 5, 8, 3**
Mass (kg)	**50 100 200**

Sample-holder surface 914 x 914 mm

The system consists of a hydraulic actuator with hydrostatic bearings, controlled by a two-stage servo-valve capable of supplying the flow rate required to transmit maximum acceleration and reach high frequencies. In addition, it has a 0.9-m2 magnesium expansion table for fixing masses of up to 226 kg. All of these elements are supported on a laboratory bench, which is secured to a reaction mass that dampens its natural response. This configuration allows the performance of tests at a frequency range of 1 and 500 Hz, depending on the required load and acceleration.

The DACTRON ® and FLEXTEST® software applications, available at **CITEAN**, allow the creation of test programs with double closed-loop control. These programs can be:

- Random spectra
- Road profiles
- Sinusoidal scans

The following tests, among others, can be performed using this system:

- Frequency scanning: identification of specific modes
- Tests for dynamic characterization in components
- Shock tests
- Shock and bump tests for packaging (EN-60068-2-27:Shock; EN-60068-2-29:Bump)

Using this system, a very large range of components can be tested covering various sectors: automotive, railway and wind power. The following are notable examples:

- Interior elements (dashboard, seats, roof, linings)
- Wheels, axle elements
- Brake systems
- Electronic systems
- Exhaust systems
- Road transport of containers and packages

Team's New Addition.....

* * * *

Team Corporation is pleased to announce the completion of its state-of-the-art air isolated, steel reinforced concrete reaction mass. This reaction mass has a tare weight of 320,000 lbs, and will be used as an inertia base for various vibration testing exercises. Eighteen airbags are used to completely isolate the mass in all six degrees of freedom. The air bags are capable of isolating the mass down to 2.1Hz and supporting an additional net weight of 100,000 lbs.

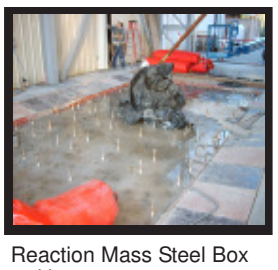
The top surface measures 13.5 ft. by 24 ft and consists of four 5 inch thick steel plates that have been grouted and post-tensioned to the concrete mass. The four plates have been installed and leveled such that the top surface is flat to under .004 in TIR, and flat to under .001 inTIR over any 12 in square area.

One unique feature of the new mass is the test object mounting surface. Not only is this surface tolerance extremely flat, but it has been designed to accept an array of standard *Team* products, and allows the flexibility to attach non-standard test object mounting patterns as well. The facility is also equipped with a 20-ton capacity bridge crane to handle a variety of large test objects.

In the near future, the new *Team* inertia base will be used for preliminary testing of the 85,000 lbf actuators which will be integrated into an upcoming NASA Space Research project. Going forward the new mass will be used regularly for validation and factory acceptance testing of various *Team* vertical, horizontal and multi-axis simulation systems.

1 Reaction Mass Footings

2 Reaction Mass Steel Box



3 Reaction Mass Steel Box with concrete

4 Exterior Frame Work

5 Finished Exterior View

6 Test Fixture

"An acre of performance is worth a whole world of promise."
William Dean Howells

Team Employee Anniversaries
(over 10 years)

Bill Murray	45 Years	Geoff Abkin	13	Mark Lennox	11
Steve Gonzales	31	Jim Blankenship	12	Tim Montgomery	11
Terry Gowler	16	Don Christian	12	Kelly Nieland	11
David Noble	16	Curt Nelson	12		
Debbie Steiner	16	Bart Thayer	12		
Gary Ford	15	Jim Vander Mey	12		
Darren Manning	15	Hal Lee	11		

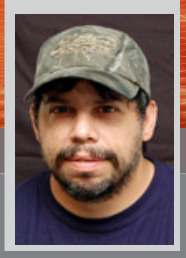
Contact Us At:

* * *

Team Corporation
11591 Watertank Road
Burlington, WA 98233
(360) 757-8601
Fax: (360) 757-4401
sales@teamcorporation.com
www.teamcorporation.com

Team Corporation UK
Team Corporation UK Ltd
11 Old Ladies Court
High Street
Battle
East Sussex
TN33 0AH
United Kingdom

Tel: +44 (0) 1424 777004
Fax: +44 (0) 1424 777005
sales@teamcorporation.co.uk
service@teamcorporation.co.uk
www.teamcorporation.co.uk

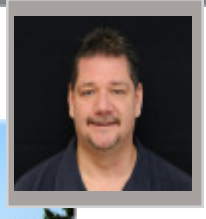


Robert Dileo

* * *

Employee Spotlight

Robert Dileo was born in Ft. Dix, NJ. Raised as an Army brat, Robert moved from New Jersey to Pennsylvania to Wyoming, finally landing in Washington State. He and his wife of 22 years, are raising their two boys ages 14 and 18. Robert and his family reside in Concrete, WA.
Robert has been with *Team* for 3 years and works as a CNC (Computerized Numerical Control) Machinist.
One year ago, Robert and his oldest son Robert Jr. got involved in the FIRST, (For Inspiration and Recognition of Scientists and Technicians), Robotics program at Concrete High School. Robert became a Mentor and spends nights and weekends helping students assemble robots and compete statewide. The first year they took 10th place out of 40 teams. Robert says," This event helps teach kids science, engineering and math…but makes it fun. The kids are learning to compete with professionalism, while assisting other teams when competing."
Statistics show that 80% of kids in the FIRST programs go on to college. Many sponsoring companies offer students jobs when they graduate with a degree in Engineering and with a 2 year emphasis in robotics. What a great opportunity for kids nationwide to get an education and have fun at the same time! Visit www.usfirst.org to read more about this fantastic program. Keep up the good work Robert!
Robert also writes the Outdoor & Rec section of the Concrete Herald.



New Employee

Mike Vojtush joins *Team's* Test & Check.

Mike was born and raised in Michigan. He is the proud father of two children; Anthony 19, who attends Northwestern Ohio University and Amanda 17, who is a senior at L'Anse Creuse High School. Prior to joining *Team*, Mike recently worked at Lear Corporation for 12 years and previously at Defiance Testing for 10 years.
Mike and his girlfriend Eileen enjoy the outdoors, and are thrilled to be here in Washington!

Job Opportunities

As a part of ***Team*** Corporation's expansion, we are actively seeking candidates to support our Sales Application Engineer position. Qualified candidates may apply online at: www.teamcorporation.com or in person at: 11591 Watertank Road, Burlington, WA 98233. Visit our website for a full job description.

We are also accepting applications for the following positions:

Machinist/Qulaity Control Inspector
CNC Lathe/ Mill Programmer Operator
Electro-Mechanical Technician

** Visit our website for a full job description. (www.teamcorporation.com)*