



Prodigy-ET

UPDATE

Issue No. 12

Transmission Durability Test Rig Systems

Rover Cars are currently building a new set of transmission durability rigs. The rigs will be powered either by a BMW V6 petrol engine or through Control Techniques motor drives.

Prodigy-ET will perform direct control of the BMW engine using high speed I/O through on board PC cards. A network communications link is utilised between Prodigy-ET and the Control Techniques drives to control and monitor the input drive and the output absorbmotors.

The rigs also allow automatic gear

changes to be made using a robotic arm, controlled by Prodigy-ET.

The high speed analogue and digital cards used allow Prodigy-ET's extensive safety monitoring facilities to be utilised. Thus, in the event of a problem, a controlled shutdown sequence is invoked to stop the rig safely.



Plans have already been made to allow very high speed road load data to be used to

control future tests which will provide an even more realistic simulation of realworld conditions.

Clutch testing at SSS Gears

SSS Gears design and manufacture *Self Shifting & Synchronising* clutches. These devices are used to automatically engage and disengage drive line power. They form a key component in many applications including ocean-going liners, power stations and submarines.

Each clutch varies in design according to its application with the largest design used for power station applications each weighing several tonnes. As part of a program of inspection and testing, each clutch is mounted in a test rig and run up to operating speed of between 2000 and 16000 RPM.



Tascomp supplied three mobile consoles, each equipped with dual Prodigy-ET operator displays. They can be connected to any one of three fixed test rigs or to a wandering unit which allows SSS Gears to build and test clutches to any customer specification. Each system can continuously monitor and log over 60 speed, temperature, and vibration related measurements.

At the end of a test, Prodigy-ET produces summary reports and its data files can be accessed by SSS Gears engineers from their offices through a Macintosh network.

Rolling Success

After a competitor's rolling road system failed when it was installed in the early 90s, LRT were concerned that Prodigy-ET might also promise more than it could deliver. Their concerns were proved to be unfounded and after several months of uninterrupted running, LRT have deemed the whole project a success. (Application write-up available)



Easier Calibration

Prodigy-ET's calibration software has recently been enhanced to make the calibration process easier and to provide calibration traceability.



By providing both raw and scaled analogue input values, the user is more aware how much of the ADC range is being used. It also has a Check facility where new settings can be validated and produces a history database of changes in calibrations. Comments can also be included to detail transducer changes etc.

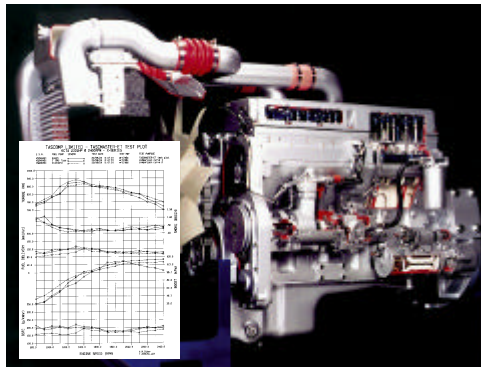
Cold Test Systems At Autocraft

Autocraft Industries are one of the UK's leading engine remanufacturers. As part of their standard quality procedures, every engine is run through a cold test to prove the work. Autocraft have recently placed orders for Prodigy-ET systems to control and monitor their testwork on five rigs.

Each system will monitor drive speed, torque, air and water flow, and a variety of temperatures and pressures. Prodigy-ET's test schedules will be configured to allow initial and final drive speeds to be controlled, along with a number of other auxiliary analogue and digital outputs.

Critical in the open test rig area will be Prodigy-ET's safety routines which continuously monitor for abnormal events and alarm conditions. If such

an event were to occur, the rig will be shutdown in a controlled manner and a full history report will be produced to help quickly identify the problem.



Completed test results will be available in the form of printed reports, graph plots and individual test data files which can be loaded into other packages.

Gearbox Endurance Test Rig

Chosen to replace the existing DSP system, Prodigy-ET has been installed on Land Rover's Endurance test rigs. Land Rover has a legendary reputation as one of the most indestructible off-road vehicles. To maintain this reputation it is vital that all power transmission components are exhaustively tested and refined before they are incorporated into the production vehicles.



Prodigy-ET systems are now being used to run a pair of Land Rover endurance test rigs. This includes monitoring vibration levels, input speed and load, output speed and a

variety of temperatures. The systems control the test by setting the required input speed and torque, and by manipulating a set of drive control digital outputs which are linked to an ABB controller.

Safety monitoring is also provided to ensure that alarm conditions are properly handled and that a controlled shutdown mechanism is used when required.

The systems provide test results in the form of graph plots, printed reports and individual test data files which can be used in any office based PC package.

News In Brief

New Drivers

A driver has been produced to allow Prodigy-ET to communicate with Control Techniques' drive controllers. Speed and load measurements can be taken, along with the drive ready status. Torque, speed and current limit set points can also be downloaded.

Prodigy-ET can also now interface to Allen Bradley PLCs through Rockwell's RS-Linx software. This means PLCs can be added or changed without alterations having to be made to the driver or to the physical connection into the Allen Bradley network.

Drivers have also been produced to communicate with a large range of Mitsubishi PLCs.

New Website

Tascomp's website has undergone a face-lift and now contains demonstration versions of Prodigy which can be downloaded onto your own PC. Latest copies of the user manual are also available on the site www.tascomp.demon.co.uk

Expansion Plans Proceeding

Tascomp are to expand their available office area by 2000 sq.ft. This additional space will be utilised as a new training area and will enable expansion of the technical support services.

New SLANG Environment

SLANG is a simple Sequence LANGUAGE with which Prodigy-ET users can write any control programs or derivation routines they need. The language is straightforward, with few keywords and an extensive library of external functions. Program validation is performed continually as a



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