Volume 1, Issue 2

December 2005

AS 9100 QUALITY

INSIDE THIS ISSUE:

Special points of interest:

- Machine interlocks
- Root causes of problems
- Making deliveries on time

2006-THE FUTURE LOOKS BRIGHT THE FUTURES NOT ORANGE

Welcome to the second issue of AS 9100 Quality. The recovery in the Aerospace sector continues. Aircraft orders for the first half of 2005 were 3 times the first half of 2004. Along with demand from the oil sector driven by the high oil price we need to examine how to expand our capacity. Apart from people, systems, and facilities the other element of our business which we need to keep at the forefront are the machine tools themselves, the cutting edge of our business so to speak. The most interesting machines to appear for many years are the NL and NT series mill turns. The NT mill-turns are just coming to the market now and are ingenious in their simplicity. Effectively a lathe and a mill bolted together these machines are supposedly not compromised in the way that earlier mill turn machines were. The flexibility of these machines combined with the right CADCAM tools may provide a fast track to complex low volume production, I.e. first of components prior to volume production runs. Such a capability would complement our main production facilities and allow us on more new programmes more easily. The catch as always is the price of this technology and whether or not it can ever make a return on capital employed. The other issue is whether the technology is sufficiently mature to be both stable and user friendly. Whilst we wish to be on the leading edge of technology we must avoid being on the bleeding edge.

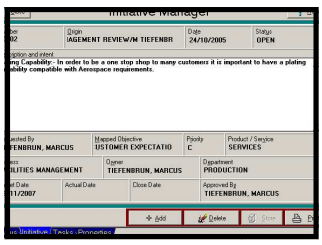
NT5400 DCG five axis mill turn machine tool.

To keep our older TL6 controlled machine tools relevant we are looking at a box of tricks called “Behind the Tape Reader” which may allow us to DNC to our oldest CNC’s. This technology also allows for “drip feeding” of programmes to the machines and thus overcomes the memory limitations of these older machine tools.

“we need to keep at the forefront”

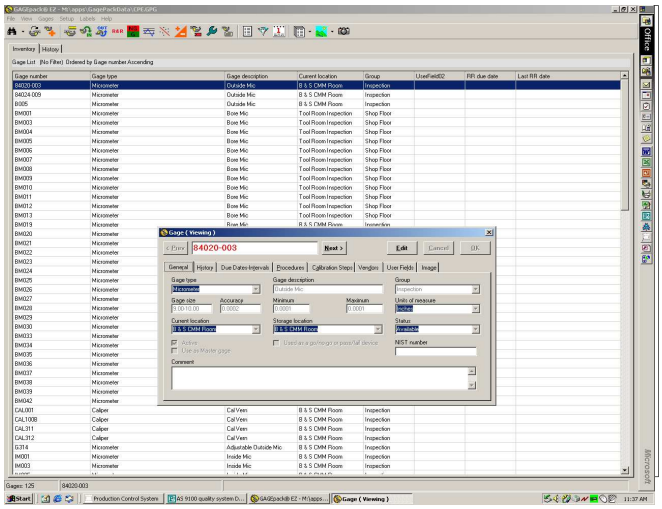
NEW DOCUMENTATION SOFTWARE.

In order to comply with the requirements of AS9100 and ISO14001 as well as assist with ISO9001 we have purchased Q-Pulse software which controls documentation, and assists with the management of planning. Other features included in the package are better handled by our own production control software and the gauge control facility by the new GAGEpack software. [see page 2 top] We are using external consultants for the ISO14001 implementation and as part of that will assist with the loading of the Q-Pulse system.



A MEASURED APPROACH TO CALIBRATION

In October we visited the Inspex exhibition to assess various software systems that control the calibration of measuring equipment. The exhibition turned out to be quite small and only one system there seemed appropriate. The system from PQ Systems is called *GAGE*pack and after a short evaluation we purchased a ten user license. This system is now in the process of being loaded up and the target is to be live and running by February 2006. When fully operational the system will monitor the calibration intervals and procedures to maintain full compliance with the AS9100 quality standards.



GAGEpack software monitors calibration of measuring equipment to ensure accuracy and compliance with quality standards.

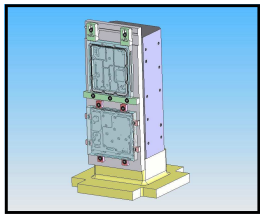
NEW CADCAM SYSTEM UPDATE

After more testing and training it has become apparent that a major and unforeseen benefit of the CADCAM system is in the front end, namely the SolidWorks CAD system. Its ability to draw in 3D with excellent graphics and import a variety of files represent a major step forward. However it is mainly the CAM system which according to Mick McGill will bring the main benefits. The ability to quickly produce reliable robust code usefully quicker than before will reduce programming lead times. Specific features which have proven especially useful are :-

- 3 axis advanced milling

[automatic roughing of a bounded feature]

- Technology Database
- Automatic Feature Recognition
- Automatic tooling sheets



3D Assembly from SolidWorks

"The ability to quickly produce reliable robust code usefully quicker than before will reduce programming lead times."

HAS ANYBODY SEEN MY TESTIMONIALS?

We received these kind words in an email from Anil Kalia of Spirax on 28th September:-

"I would like to put on record the excellent work that Jim Finlay and his team has done over the last 3/4 months in satisfying us in absolutely a superb manner, especially after I visited Castle. Without Castle's help and service we would have never achieved the levels of customer service that we did."

Lynne Browne of BAe sent us a Plaque thanking us for our contribution to their Infrared Counter Measures system:-

"Without your continued support over the duration of the Programme, we would not have achieve this milestone."

Many visitors to the Company remark on the generally good standard of housekeeping and the high activity levels. We could however improve the intelligibility of the inspection areas by clearly marking which area is for which purpose. I.e. parts to be inspected area.

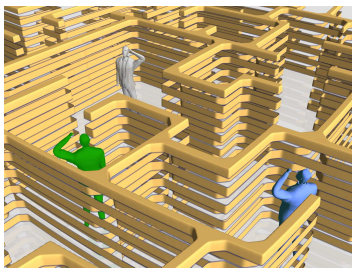
Defending the Western World

LOGGING LOST TIME

Previously the production control system tried to track machines waiting for inspection time including over weekends. To better identify lost time where a machine tool is stopped awaiting an inspection, the shop floor data collection system has been updated. When an operator logs off a works order to do something else as a part is booked into inspection, if the machine tool is sitting waiting for inspection before it can continue then he must log the machine only [not himself] back on to the works order ticking the box "machine waiting for inspection" At night before going home he must log off the machine waiting, before he can clock out.

If someone on nightshift is going to run this job as soon as it clears inspection then immediately after clocking in he should log the machine [and only the machine, not himself] back on to waiting for inspection. When then inspection is complete the operator should log off the machine waiting for inspection and then log himself onto the works order.

If any operator is confused [and it'll be a bloody miracle if someone isn't] by this he should talk to his supervisor. If any supervisor is uncertain of how to operate this he should contact the Managing Director or the IT manager for clarification.



As always "If in doubt, Ask!" do not assume.

HEALTH AND SAFETY

From time to time it is necessary *as a last resort* to defeat a machine interlock to finish polish a component. But it is not the FIRST RESORT! If we have a problem with a finish on a component then this must be brought to the attention of the projects office with a view to reprogramming job to eliminate the polishing operation. If after examination it proves impossible to eliminate the problem and there is still a degree of manual intervention required, then a full risk assessment MUST be carried out. The new documented procedure has to be followed. We are currently examining the introduction of "dead mans switches" to be used when we are compelled to hand finish. Until this is implemented a second person will stand by the emergency stop button whenever we do manual finishing. Meantime no operator should disable a machine safety interlock without consulting his supervisor who ensures that a full risk assessment is carried out to provide a safe method of

"Are we overconfident "

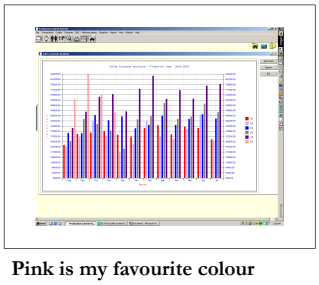
2006 A GOOD YEAR FOR CASTLE

As we draw to the end of the year it would appear that there is some reward for virtue. Given our improved performance this years annual wage review is ahead of inflation.

Every year the demands placed on us by customers grow and we in turn must respond with greater performance. Utilising new tools and methodologies has uncovered many problems of which we were not fully aware. But every problem, although distressing is an opportunity for improvement and we seem to have lots and lots of opportunities to improve.

When we do uncover problems [opportunities] it is VITAL that we get to the root cause of the problem & not simply paper over the cracks.

The most important lesson for 2006 is ROOT CAUSE and the tools to uncover it. As we go into the new year training in and understanding of this issue will be vital.



Pink is my favourite colour
Julie Forrest

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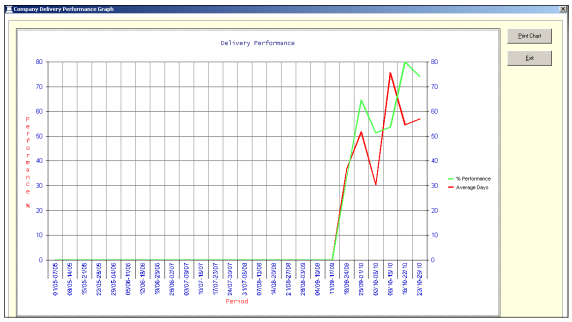
AS9100 is our future.

Castle

UnderStand and Deliver

Delivery performance is a key AS9100 measure. However it is vital that we are aware of how our customers set , modify and monitor delivery adherence. Each customer is different but there is now a new tool under development in the production system to assist us monitoring our delivery performance. It is now possible to examine delivery performance by Week, Month, Customer, Contract, or Section. Ultimately the programme will allow us to set individual delivery windows for each customer. Our goal must be to achieve 100% delivery compliance and in the case of RR contractual work to deliver goods on Manifest. The Catch 22 (or as the immortal Bill McGlade would say 'Catch 2') is that to go onto Manifest we need a better delivery performance but without going onto Manifest we will not get a better delivery performance. At some point soon, as delivery performance improves as reflected by the graphs, we are just going to have to make the leap. In order to manage the material requirements planning and factory scheduling to a higher standard we will be putting additional resources i.e. Personnel, into the materials department.

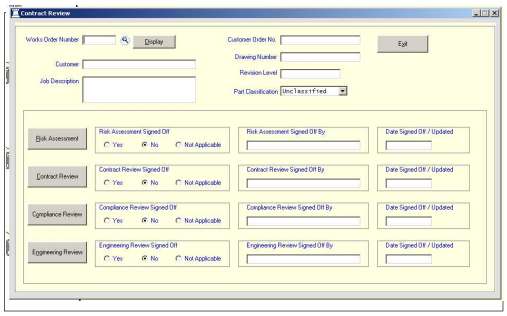


Developments in Production Control System

Contract Review. A key requirement of SABRe is contract review which up until recently was mainly an informal & fragmented process. The new system formalises & documents this. There are four main components complete and three to be implemented:-

1. Risk Assessment
2. Contract Review
3. Compliance Review
4. Sales Engineering Review
5. Fair Review
6. Quality Review
7. Production Engineering Review

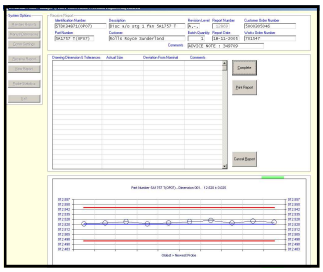
Risk Assessment is carried out by the Projects Office. Contract review is the responsibility of the front office. Compliance Review is performed at the end of the process to ensure that everything is correct and complete and is the responsibility of the quality department. Sales Engineering Review can be carried out by the Projects Office or, in most cases, by the Sales Team liaising with the customer to record what engineering resources are available. The FAIR Review is the responsibility of the Quality Department as is the Quality Review. Finally the Production Engineering Review will be the responsibility of production and the production manager.



The final system with have seven main functional areas.

There are continuous developments of the system but some of the more important recent developments are:-

- Displaying the graphs as well as the reports when probing components on the lathes.
- Getting the graphs in the correct chronological order.
- Drilling through on a works order screen to straight to the machine loading for that particular works order.



Probe reports now show graphical trends