



A. C. Macris Consultants

UPDATE

Autumn 2001

Highlights

REAL RESULTS

Yes this is the Autumn 2001 issue. Rather than just skip ahead and miss a few issues, since this work was done late last year, I wanted to keep it in that context. Also, because the title refers to Real Results, in the next few issues, we will include follow-up of the ongoing results.

Now for **Real People, Real Objectives, Real Teams = Real Results**. Perhaps the most significant difference we offer our clients in the context of working with their teams is a Results focused approach. The results are based on specific Objectives. This is not to say that we force predetermined outcomes. What we do is work with our clients to establish environments where honest results are achieved. Sometimes they may not be the exact results we hoped for, but that's good because when we go into these things the Real People may have ideas that shape the outcomes into results that may be more applicable. This issue of Update discussed an approach used to create such an environment. An environment that stimulated open thinking, and open dialogue based on experience from some of the world's best experts in the field of railway Rolling Contact Fatigue (RCF). Therefore, the results yielded a validation of a process and its findings along with comments and suggestions that further enhanced the ultimate strategy to address and correct RCF. Winter and Spring issues hopefully will follow soon.

REAL PEOPLE+ REAL OBJECTIVES + REAL TEAMS = REAL RESULTS

A.C. Macris
AC Macris Consultants

Steve Clark
Transportation Technology Center, Inc.

Envision This:

Ten months of accelerated analysis commissioned to identify a set of technical solutions to a rail failure problem on the British railway network, Rolling Contact Fatigue, which resulted in a serious derailment killing four people in October 2000. A panel of international railway experts was invited to review the analysis with its resulting strategy, and the work that had been performed. Add the various 'stakeholders' who will certainly be affected by the analysis and subsequent strategy; and hope that at the end of a three-day meeting there would be consensus on the efficacy of the analysis and the viability of the strategy to correct the problems. This article discusses the process and the outcomes, which we believe to be another great example of our "Real Teambuilding" philosophy.

The scenario:

A train derailment outside of London, England on October 17, 2000, causes a national uproar. The British railway system failed, causing four fatalities. Almost equally devastating was the loss of a nation's people's trust and faith in their essential railway system. The following is an excerpt from a book titled *The Crash that Stopped Britain* by Ian Jack.

Note on Ian Jack – Ian Jack is a journalist and has been an editor of Granta Magazine since 1995. The following excerpts, from his book "The Crash that Stopped Britain," do not reflect the views of the authors of this article. We are merely using Jack's book to provide background information.

"On that day at 12:23 pm the 12.10 King's Cross (London's main line) to Leeds express entered the curve at 115 miles per hour – the maximum permitted speed for this stretch of track – came off the rails. Four people died. They were:.....
All four men had been in the buffet car (coach G). Its roof was ripped off when it struck one of the steel stanchions placed regularly at the side of the track to support the line's overhead electric wires. Another seven coaches were derailed; the locomotive and the first two coaches remained on the track. If the same number of dead had been recorded in a motorway accident, it would have been a small news item. It threatened no record in recent British railway crashes (Southall 1997, seven dead; Ladbroke Grove, 1999 thirty one dead). Historical comparison made it almost a minor incident (the three-train Quintinshill collision, 1915, 227 dead). But no other railway accident in British history – or, I would guess, any other country's history – has led to the degree of public anger, managerial panic, political confusion, blame and counter-blame that came in the wake of the Hatfield crash."

Background:

The privatization of the British Railway system is a complex issue. A synopsis of the background of industrial privatization (including the railway) is excerpted from Ian Jack's book, as referenced above. "During successive Conservative governments between 1979 and 1997 more than two thirds of Britain's state-owned industry was sold to the private sector, transferring millions of jobs and raising £65bn for the Treasury." "Several public utilities – the gas, water and telecommunications industries – were sold off *en bloc* to become private monopolies, no more responsive to the market or the consumer than when they were owned by the state. When the turn came for the electricity industry to be privatized, the government broke it down into more than a dozen generating and distribution companies. This seemed to work; competition between them produced 'efficiency', i.e. lower costs. The promotion of competition became a key element in future privatization schemes, and the electricity industry a model for the railways.

Horizontal separation - the railways as regional monopolies – kept trains, stations, track, signaling and general infrastructure under one ownership, the way they had always been. Vertical separation was a more radical solution. It would separate trains from rails. The owner of the rails would charge the owners of the trains for access to them, on the same principle as a toll road. Different train owners could compete for passengers and freight on the same stretch of track. The idea found favor in Major's old department, the Treasury, and though the object of it has never been achieved (very few train companies compete for the same traffic over the same line), the competitive principle behind it was used to fragment Britain's railways into more than a hundred separate businesses, about the same number that had been amalgamated in 1923....Opinion polls showed that a large majority of the public was against it, the Labour Party in opposition fought it, and even the Conservative press was skeptical....The passenger trains were to be run by twenty-five Train Operating Companies (TOCs) on franchises which ran from between seven and fifteen years. The trains would be owned by three Rolling Stock Companies (ROSCOs) which would lease them to the TOCs. The railway signaling, the permanent way, bridges, tunnels and some of the larger stations would be owned by one large infrastructure company, Railtrack. Railtrack would contract maintenance and renewal of the infrastructure by competitive tender to civil engineering companies (which had bought British Rail's engineering assets). They in turn might put out work to subcontractors."

Let's briefly look at the regulatory side of all this. There are the following regulatory bodies:

First, there is the Office of Rail Regulator (ORR). The ORR's principle function is to regulate Railtrack's stewardship of the national rail network. It provides the economic regulation of the monopoly and dominant elements of the rail industry. The ORR sets the amount that Railtrack is allowed to charge for access to its tracks and infrastructure, and is independent of the British government.

Then there is the Strategic Rail Authority (SRA). The SRA operates under the direction and guidance issued by the British government, and is responsible for using public funding to attract the private sector investment to enhance the railways. It is also responsible for deciding which TOC is awarded which franchise, adjudicating the level of public subsidy required by the TOCs, and rewarding or penalizing train operating performance through a system of bonuses and penalties.

And there is the Health and Safety Executive (HSE). The HSE is the regulatory authority for health and safety in British Industry. HSE seeks to ensure that the risks are properly controlled, and provides advice to the Government, the SRA and the ORR on health and safety issues related to the railways.

Ian Jack continues: A perspective: between 1992 and 1997 the number of people employed on British railways fell from 159,000 to 92,000 (~42% decrease) at a time when the number of trains increased. Within these totals the numbers of workers permanently employed to maintain and renew the infrastructure fell from 31,000 to between 15,000 and 19,000 (between 51% to 38% decrease). In interviews with the most experienced survivors of the original British Rail skilled workforce, they "spoke scathingly of the methods of their new employers, the private contractors who worked for Railtrack." Specifically one worker said: "At least 50% of the track is on its last legs. If it's not broken rails, it's broken components. If the public knew the full picture, it would be horrified."

The Challenge and Strategy

Rolling Contact Fatigue was not a new problem on the British railway system. However, never before had it been identified as such a large problem. The challenge of developing a set of acceptable technical solutions to this problem became the work of Transportation Technology Center Inc. (TTCI), the railway research and technology company owned by the American Association of Railroads, and Ove Arup and Partners International, Ltd. (ARUP), a large international engineering consulting firm. This team

UPDATE is published quarterly by A.C. Macris Consultants. UPDATE's charter is to provide interesting articles, on timely topics, authored by people in industry, academia, or business.

Please contact us at the following:

Telephone: 860.572.0043

Toll Free: 888.225.4963

FAX: 860.446.1882

E-mail: ACMPC @ acmacris.com

U.S. Mail: P.O. Box 535, Mystic, CT 06355

This UPDATE Newsletter is copyrighted material. All rights are reserved. It is against the law to make copies of this material without getting specific written permission in advance from A.C. Macris.

integrated ARUP's strong engineering programme management capabilities with TTCI's international railway technology and analytical expertise to conduct an accelerated investigation of Rolling Contact Fatigue and prepare a strategy for correcting and controlling this phenomenon throughout the British railway system.

Managing Risk:

Railtrack, the company that commissioned the ARUP/TTCI program, was absolutely committed to having the work and the resulting conclusions to be objective and comprehensive. Yet in the existing environment, it was perceived that few would have faith in any conclusions because it was virtually pre-determined by the stakeholders that any work by Railtrack would be performed strictly in Railtrack's favor and to the disadvantage of all other industry stakeholders. If the work was perceived as being biased, the technical solutions would never be accepted and the huge investment of time and money into the study would be marginalized.

ARUP and TTCI, both internationally recognized companies of excellence, had their reputations on the line by laying out 10 months of comprehensive work before a group of experts to be openly and critically judged. ARUP/TTCI invited a blue ribbon panel of railway experts from across Europe, South Africa and North America to review the strategy, and comment on its efficacy and viability. Specifically they were asked to address the following four target questions:

1. Is the Control Strategy developed by the ARUP/TTCI team a sound solution backed by sound state-of-the-art technical analysis?
2. Does the Control Strategy consider all aspects of the mechanisms the cause or contribute to Rolling Contact Fatigue?
3. Does the Control Strategy consider the solutions from a vehicle/track systems perspective?
4. What further work should be considered?

While all were from the railway industry, each of the experts came from very different railways, countries, cultures, and perspectives. All were strong personalities and recognized as top in their field among the worldwide railway community. If they found fault with the work, both ARUP and TTCI's reputations could be severely damaged.

Chatham House Rule

Typically when we embark on facilitating such a meeting we establish Ground Rules. While this is a sound concept the interesting point here is that we were dealing with an international group of people. Rather than spend their time working through how the meeting would be conducted, we used the British Chatham House Rule: *"When a meeting or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speakers, nor that of any other participant may be revealed; nor may it be mentioned that the information was received at the meeting."*

The origin of the Chatham House Rule:

The Royal Institute of International Affairs, also known as Chatham House, is one of the world's leading institutes for the analysis of international issues. Founded in 1920, the Institute works to stimulate debate and research on political, business, security and other key issues in the international arena. It does this through its research, meetings, conferences and publications as well as through its library and information centre and expert interviews for the media.

The strategy of validating the Control Strategy was sound but risky considering the potential consequences.

Attempting to get seven different international experts to set aside any personal or vested interests and focus on an issue that may or may not have direct or indirect benefits to their country's railroads was a significant challenge. Aside from purely addressing the technical aspects of the analysis and resulting strategy, the facilitators of this meeting were faced with the potential for negative group dynamics. There was professional, national, and personal pride and reputation at stake.

AC Macris Consultants involvement was to facilitate this meeting of international experts, (referred to as Peer Review meeting) to address and achieve consensus on the four target questions.

The Hedge - Build Consensus by Building a Team:

The meeting needed to be successful – but what does success mean? The first challenge for the meeting facilitators was to ensure a clear definition of success amongst the attendees. The definition of success must be one that everyone could agree with and understand, and one that would meet the objectives necessary for moving the Control Strategy forward. The first success for the group was the following definition of success:

- ◆ Achieve a common understanding of the issues and driving forces behind this project as well as the similarities and/or differences of the conditions in other world railways.
- ◆ Validate the inputs, methodology, assumptions and outcomes, (based on good facts).
- ◆ Identify any fatal flaws in the project's logic or thinking that would affect the Control Strategy.
- ◆ Obtain consensus of the Control Strategy solutions and create ownership for going forward.

The next challenge was to keep the proceedings focused and productive, allowing sufficient time for dialogue, but not so much time that the discussions could digress from achieving success. Therefore, the structure of the session involved formalized presentations of the technical issues integrated with both structured and free-flow discussions. The formalized presentations established the technical basis for the investigation and the resulting Control Strategy conclusions. Following these, we provided time for

facilitated discussions that solicited initial impressions of the information presented. These structured/facilitated discussions also got ideas flowing and provided an opportunity for a group of strangers to become comfortable with each other while keeping things properly focused. In addition, these structured discussions allowed for questions and clarification that further strengthened the basis for the experts to formulate their opinions of the Control Strategy.

Then, to ensure an environment that supported open thinking and critical evaluation of the Control Strategy, less structured/non-facilitated or free flowing discussion periods were designed into the process. Free-flow discussions afforded people the opportunity to give their input, allow creativity to develop, and ensure that no one was prevented from expressing his or her opinions and experiences.

The facilitators expected areas of conflicting opinion and experience. To prevent these touchy areas from stalling the productivity of the peer review meeting, it would be necessary to turn such conflict into positive discussion and reflection. The experts were asked to meet in a private session to conduct discussions amongst themselves with the charge to come out with showstoppers or other areas they could not agree with. This meeting solidified the experts as a team with a very defined objective. The team of experts returned to the group setting and provided preview of their position. The purpose of that preview was to ensure they did not reveal any fatal flaw in the overall project. If a flaw was detected the program,

Control Strategy would need to be modified to address any such issue. No fatal flaws were reported. On the last day the experts reconvened to prepare their final position and presentation of their opinions.

While the experts were caucusing the other duty holders present were afforded the time conduct their own proceedings, particularly in the context of how the Control Strategy might be introduced and implemented throughout the British railroad system. This group realized they had common issues and that if they worked together they might have a better chance of overall implementation success.

The teambuilding framework we designed was very successful, and the group's definition of success was achieved. On the final day the experts presented their findings. In summary, the experts reached consensus and fully supported the Control Strategy. Clearly, they had a number of constructive comments and suggestions which were included in the final version of the Control Strategy released to the British railway industry. They functioned well as critical evaluators and approached their final comments in that context. The experts reported that there were no showstoppers. They shared good practices that worked well in their respective countries and also provided expert opinions on the conditions that may apply to the UK system and conditions that may not. Overall, their inputs allowed the ARUP/TTCI team to move forward with the Control Strategy. The expert's review also provided Railtrack the validation of the Control Strategy necessary to embark on translating the findings of the investigation into the necessary documentation to begin implementing the strategy.

Real People + Real Objectives + Real Teams = REAL RESULTS



P.O. Box 535 Mystic, CT 06355
www.acmacris.com