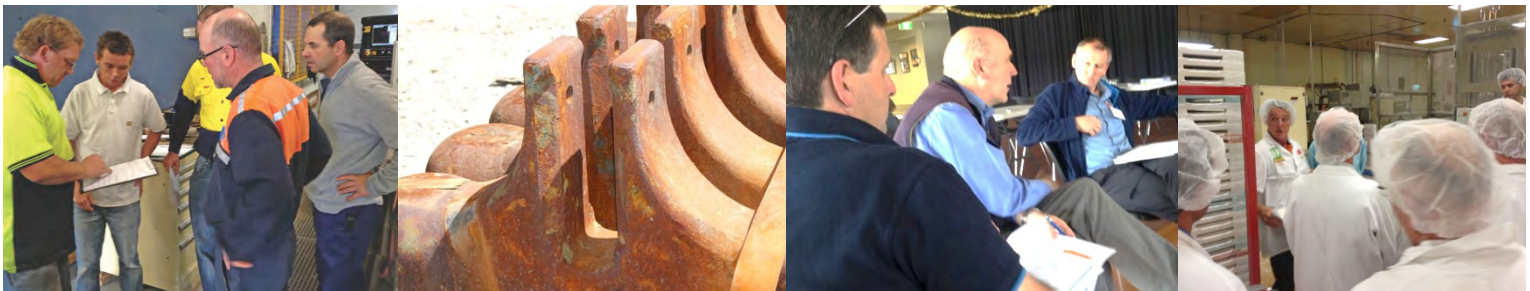




Business Action Learning Tasmania
Lean Action Learning Program – Round 2
Final Report



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March 2014

THIS TRAINING IS SUBSIDISED BY SKILLS TASMANIA

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Executive Summary

This is an evaluation report on the Business Action Learning Tasmania (BALT) program conducted in the Tamar Valley region, Tasmania over the period November 2012 to October 2013. This report has been prepared for Skills Tasmania by Cother Consulting Pty Ltd.

The program was based on the Lean Action Learning process. Five companies participated in the program; CPT Engineering, Tas-Fab Laser Services, Kempe Engineering George Town, Bell Bay Aluminium and ACL Bearing Company.

The objectives of the program were:

- For the individual participant:
 - Development of action learning skills
 - Achievement of competencies which will enhance their career prospects, enhance the contribution that they can make to their company's performance, and achieve formal recognition against the Australian Qualifications Framework.
- For participating companies:
 - Improved business performance through addressing an issue of high priority
 - Opportunity to learn from other companies' experiences and benefit from the fresh views of outsiders to the company
 - Enhanced competency of key employees with formal recognition for that competency
 - Development of a pattern of action learning which can be further developed and extended within the company
- For the State of Tasmania
 - Further development of a strategy to promote collaboration between companies and across industry sectors to advance the performance of industry in the State and raise the skills of the workforce.

The report outlines the process used to plan and conduct the program and the outcomes achieved.

The conclusions of the evaluation are:

- The BALT program achieved the outcomes sought, for the individual participants, participating companies and the State of Tasmania. The companies achieved significant business benefit from their collaboration, including winning some \$4 million of work for Tasmania that would otherwise have gone offshore. The six participants achieved a Certificate IV in Competitive Systems and Practices.
- It is feasible for the facilitators of BALT projects to be sourced from within the ranks of the participating companies providing the companies see some direct business benefits from the projects they facilitate.
- Remote observation, assessment and mentoring of action learning teams via Skype, Facetime or similar technology is feasible providing there is a good wireless internet connection at either end. Remote facilitation would not be feasible for a novice action learning team but may be feasible with a team of experienced action learners.
- As a prototype of a strategy to promote collaboration the Business Action Learning Tasmania program has been successful. The BALT Co-ordination Team have worked very

effectively together. BALT is a practical example of what can be achieved by industry and government co-operating for a common purpose.

- The design of the program is well founded and would be of interest to those wishing to conduct similar programs in other regions of Australia and around the world.
- The fact that the BALT program enables participants to achieve a nationally recognised qualification entirely by action learning is possibly unique in the world.
- The BALT Co-ordination Team has a clear and considered strategy to expand the program in Tasmania. If these plans are realised, over the next two to three years the BALT program could achieve international significance as a model for industry collaboration.

The recommendations are:

- Consolidate the program in the Tamar Valley and extend the program into the Cradle Coast and Hobart regions, in line with BALT's strategic plan.
- Develop more local qualified facilitators drawn from participating companies. Integrate their training and qualification with BALT programs. Establish a virtual learning community for continuing support and professional development of facilitators
- Introduce "multiple-problem action learning" into the implementation phase of programs, with participants meeting periodically as a cohort or action learning set to compare and evaluate their experiences as they lead their implementations.
- Introduce learning logbooks and end of session storyboarding, together with more detailed surveys conducted throughout the program, to encourage more effective reflection.
- Provide virtual conferencing facilities for teams eg GoToMeeting, WebEx or teleconferencing to facilitate team meetings outside face-to-face sessions and meetings with remote stakeholders and technical experts
- Engage a wider cohort in analysing processes and brainstorming solutions by selectively sharing, via the internet, videos of processes under examination by project teams and inviting ideas and suggestions from the wider alumni.
- Conduct a series of supporting events through the course of a program to enable participating companies to continue to engage with each other, in particular the senior managers.
- Establish a pilot self-managed action learning program. Participants in this program would have successfully completed a Certificate IV in Competitive Systems and Practices through participation in a BALT program, and have been identified by management for further leadership development. They would be candidates for a Diploma in Competitive Systems and Practices. Employ remote observation, mentoring and assessment as part of this pilot program.
- Selectively offer places to undergraduates in BALT project teams to provide them with an industry-based learning experience and to build links between industry and universities.
- Consider including academics, TAFE and secondary teachers in BALT project teams to participate as team members.
- Further enhance links between industry and universities by conducting a parallel BALT program with multi-disciplinary action learning teams, comprised entirely of students, working on projects sponsored by companies.
- Broaden the scope of BALT projects to include projects focused on innovations in product, marketing and distribution.

- Conduct an over-arching action research project to compare and contrast the effectiveness of action learning reflection versus competency-based assessment in identifying and evaluating the learning outcomes of action learning projects.
- Engage with organisations, industry bodies and institutions around the world that conduct similar programs, to share experiences and ideas, for mutual benefit.



Figure 1: Pot shell repair at Kempe Engineering, George Town

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1. Introduction

This is a report on the Business Action Learning Tasmania program conducted in the Tamar Valley region, Tasmania over the period November 2012 to October 2013. The report was prepared for Skills Tasmania by Cother Consulting Pty Ltd.

The program was based on the Lean Action Learning process. Five companies were involved in the program; CPT Engineering, Tas-Fab Laser Services, Kempe Engineering George Town, Bell Bay Aluminium and ACL Bearing Company.

The objectives of the program were:

- For the individual participant:
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 - Development of a pattern of action learning which can be further developed and extended within the company
- For the State of Tasmania
 - Further development of a strategy to promote collaboration between companies and across industry sectors to advance the performance of industry in the State and raise the skills of the workforce.

Substantial funding for delivery of the program was provided by Skills Tasmania. Participating companies each made a financial contribution. The Tasmanian Department of Economic Development, Tourism and the Arts (DEDTA) funded a number of supporting events and activities and provided in-kind support to promote and enhance the program.

This report outlines the background, planning, delivery and outcomes of the program and presents recommendations for the future development of the program.

2. Background

2.1 Action Learning

Action Learning is a term coined in the 1940's by British physicist and management educator Reginald Revans¹. Internationally, action learning is a widely used intervention for leadership and organisation development. The popularity of action learning has been driven by related, tangible outcomes and relevance to real organizational issues.²

Action learning involves a group of people coming together to undertake a practical project. Participants come from different situations with different skills and knowledge to bring to bear on the problem. The intended change is used as a vehicle for learning through exploration and reflection.

Action learning is a natural way for adults to learn. It particularly suits people who may not shine in a classroom. Action learning projects achieve organisation outcomes and personal development outcomes. They demonstrate what is possible and set a pattern of learning for the organisations involved.



Figure 2: Tas-Fab Laser Services project team storyboarding initial impressions, (L-R) Nick Williams (Kempe Engineering, George Town), Brian Lockhart (BBA, obscured), Ian Harris (ACL Bearing Company), David Thomas (Tas-Fab Laser Services)

2.2 Lean Action Learning

The original Lean Action Learning Program was initiated in South Australia in 2006, with funding and support from the South Australian Department of Trade and Economic Development. The program was devised and facilitated by Bob Cother of Cother of Consulting Pty Ltd.

The objectives of the program were to:

¹ Revans, R., ABC of Action Learning, Gower Publishing Ltd, Farnham, 2011,

² Yonjoo Cho and Toby Marshall Egan, Action Learning Research: A Systematic Review and Conceptual Framework, 2009, Sage Publications

- Enable companies to learn with and from each other by tackling real projects of vital importance, using an action learning/action research approach.
- Demonstrate the application of lean principles across the supply chain, including manufacturing, warehousing, transport, procurement and distribution.
- Disseminate the learnings.

Over the period 2006 to 2010, 13 projects involving a total of 27 companies and 50 participants were completed in South Australia.



Figure 3: Tasmanian Lean Action Learning Program 1 Graduation group photo, September 2011, (L-R) Jose Florez (Tamar Valley Dairy), Manuel Matteo (Tamar Valley Dairy), Ian Paterson (Skills Tasmania), John Collins (Rio Tinto Alcan now BBA), Allen Wells (ACL Bearing Company), Bob Cother (Cother Consulting), Paul Grant (ACL Bearing Company), Jessica Rouse (Rio Tinto Alcan), Rob Miley (Department of Economic Development, Tourism and the Arts)

2.3 Lean Action Learning in Tasmania

Following two visits by Bob Cother to Tasmania in 2009, for discussions with DEDTA and Skills Tasmania, it was agreed that the Lean Action Learning approach was a good fit with the needs of a range of Tasmanian enterprises.

Various options for conducting and funding Lean Action Learning projects in Tasmania were discussed. Skills Tasmania indicated that it would be highly desirable for Lean Action Learning participants to gain units of competency under the Australian Qualifications Framework as a result of completing a Lean Action Learning program.

A pilot Lean Action Learning Program was conducted in the Tamar Valley Region in the period October 2010 to September 2011. Three companies were involved in that program, Tamar Valley Dairies Pty Ltd, ACL Bearing Company³ and Rio Tinto Alcan Bell Bay. The six participants successfully completed the Certificate IV in Competitive Manufacturing. The program review report⁴ found that program objectives for participants, participating companies and the state of Tasmania were achieved.

³ ACL Bearing Company is a division of Automotive Components Ltd. The company was in receivership at the time of the pilot program.

⁴ Cother, R. F., Tasmanian Lean Action Learning Program Final Report, Cother Consulting Pty Ltd, September 2011

2.4 Business Action Learning Tasmania (BALT)

BALT was formed as a result of the pilot Lean Action Learning Program in the Tamar Valley.

BALT is an un-incorporated industry-based interest group. The BALT vision is to be:

A like-minded group of companies respected as facilitators of quality business improvement outcomes, achieving outcomes through real project action learning, delivering demonstrable business outcomes, and sustainable skills sets while supported by national accredited training including Competitive Systems and Practices.

BALT is represented by a Co-ordinating Team. Current membership of the Co-ordinating Team is:

- Andrew Thompson, Manufacturing Manager ACL Bearing Company (Chair)
- Bill Woodworth, Business Improvement Specialist, Bell Bay Aluminium
- Michael McGee, Skills Tasmania
- Rob Miley and John Macleod, Department of Economic Development
- Bob Cother, Program Facilitator, Action Learning Institute

2.5 BALT operation and meetings

The BALT Co-ordination Team began meeting in late 2011 (originally as the Tasmanian Lean Action Learning Advisory Panel). They immediately set about planning a second action-learning program in the Tamar Valley region.

To date the BALT Co-ordination Team has met 21 times. Generally these meetings have been teleconferences although in August 2013 they met face-to-face at ACL Bearing Company for a full-day strategic planning session. Andrew Thompson chairs meetings and Bob Cother has acted as secretary. An agenda is created and minutes are produced for each meeting.



Figure 4: Project scoping forum conducted in November 2013 by the BALT Coordination Team, (L-R) Bill Woodworth (BALT Facilitator), Colin Berry (Tasmanian Alkaloids), Mike Thomson (Petuna), Chris Barcza (East Tamar Maintenance Services)

3. The 2012/2013 BALT Program

3.1 Recruitment of companies to the program

The BALT Co-ordination Team oversaw the recruitment of companies to the program. The Co-ordination Team listed companies they thought were potential candidates and individual Co-ordination Team members agreed to approach these companies. The initial list included some 24 companies. Approaches were made to 10 of these companies and ultimately 5 companies were recruited to the program, namely:

- CPT Engineering
- Kempe Engineering George Town
- Tas-Fab Laser Services
- Bell Bay Aluminium
- ACL Bearing Company

Having been involved in the pilot program, Bell Bay Aluminium and ACL Bearing Company played a key role in the recruitment process and ultimately the three new companies recruited to the program were from among their suppliers. Involving suppliers in this way provided the opportunity to explore the benefits of action learning across the value chain.

Bell Bay Aluminium (formerly Rio Tinto Alcan Bell Bay) is a division of Pacific Aluminium. Bell Bay Aluminium produces primary aluminium products for domestic and export markets. CPT Engineering and Kempe Engineering George Town are suppliers of maintenance and engineering services to Bell Bay Aluminium.

ACL Bearing Company manufactures engine bearings, bearing materials, powder metallurgy parts and gaskets. Tas-Fab Laser Services is a supplier of specialized low volume components to ACL Bearing Company.

Before recruiting the three new companies to the program, some sensitivities had to be resolved. Their business activities overlapped and in some areas they were potentially competitors. These issues were successfully resolved to the satisfaction of the three companies and they agreed to participate.



Figure 5: CPT Engineering project team discussion with Facilitator, (L-R) Rajesh Kulkarni (Facilitator), Duane Bird (Tas-Fab Laser Services), Ian Harris (ACL Bearing Company)

3.2 Project Team Participants

Bell Bay Aluminium nominated two people to participate in the program. Each of the other four companies nominated one person. Each nominated person participated in two projects. This allowed for a team of four for each project; two from the host company and their sponsor company (BBA or ACL) and two people from other companies. As an option it was possible for companies to include a fifth person in each team who could, if they chose, gain some competencies towards the Certificate IV in Competitive Systems and Practices but not the complete qualification. This option was taken up by one company, Tas-Fab Laser Services.

The following table provides a profile of the seven participants.

Gender	7 male
Age	55, 50, 49, 47, 46, 36, 30
Highest education qualification	4 x Year 10, 1 x Year 11, 2 x Diploma
Current Job Role	Planner/Maintainer, 3 x Workshop Supervisor, Technical Support, Project Manager, Process Operator,

A facilitator met privately with each participant prior to commencement of the program, to determine their willingness to be involved in the program, their individual learning needs and to brief them on the action learning process.



Figure 6: Kempe Engineering, George Town project team value stream mapping, (L-R) Ian Hutchison (BBA), Nick Williams (Kempe), Brian Lockhart (BBA), Leigh Edgerton (CPT Engineering)

3.3 Project Facilitators

Bob Cother of Cother Consulting Pty Ltd facilitated the pilot program in 2010/2011.

BALT was of the view that for programs to be sustainable into the future it was important to develop local facilitators. Ideally these facilitators would come from participating companies. Bell Bay Aluminium identified that they had several well qualified business improvement specialists and generously volunteered to make two people available to work with Bob Cother to facilitate the proposed program. They were Rajesh Kulkarni and Bill Woodworth, both highly experienced business improvement specialists and Six-Sigma Black Belts

The first two projects, (CPT Engineering and Tas-Fab Laser Services) were facilitated by Bob Cother, assisted by Rajesh and Bill. For the third project (Kempe Engineering George Town), Bill Woodworth facilitated with Bob Cother participating via Facetime from Adelaide as observer and assessor.

In the course of the program Bill Woodworth also undertook training with a local Registered Training Organisation to attain a Certificate IV in Training and Assessment. This means that Bill is now fully qualified to facilitate and assess future BALT projects, subject to his availability and the agreement of Bell Bay Aluminium.

3.4 Project Specifications

The three projects were as follows:

No	Project Host Companies	Project Focus
1	CPT Engineering & Bell Bay Aluminium	Anode rod repair process
2	Tas-Fab Laser Services & ACL Bearing Company	Shop floor information system
3	Kempe Engineering George Town & Bell Bay Aluminium	Pot shell repair process

Project specifications are included as Appendix 1.

In specifying the three projects, consideration was given to the needs of the host companies as identified by senior management, together with the overall alignment with the requirements of the Certificate IV in Competitive Systems and Practices. Each project provided a vehicle to apply Lean Principles in a practical setting. The aim was to ensure that each participant had a pathway to complete the Certificate IV as a result of:

- Participating in two project teams (one “home” and one “away”)
- Implementing the project recommendations for their home company.

This planning revealed that a total of sixteen units were to be addressed across the three projects. A master spreadsheet matrix was prepared showing on one axis all of the sixteen units, their elements, and performance criteria and on the other axis the five sessions and subsequent follow up sessions for each of the three projects.

From the master spread sheet a matrix was prepared for each participant showing the two projects they were to participate in, and the units and elements in their training plan. Each candidate was required to complete 12 units in accordance with the packaging rules for the qualification.

Individual training plans were then developed for each participant that enabled them to meet the requirements of the Certificate IV, based on their pair of projects.

Bob Cother and Bill Woodworth met with each company on two to three occasions to develop and finalise the project specifications and interview the participants prior to commencement. Particular care was taken to identify specific, measurable outcomes for the project, where possible.



Figure 7: CPT Engineering project team initial site tour at Bell Bay Aluminium, (L-R) Leigh Edgerton (CPT Engineering), Ian Harris (ACL Bearing Company, obscured), Duane Bird (Tas-Fab Laser Services), Ian Hutchison (BBA), Rajesh Kulkarni (Facilitator, BBA)

3.5 Program Delivery

The three five week programs were conducted on the following dates:

- CPT Engineering November 20, 27, December 4, December 11, December 18 2012
- Tas-Fab Laser Services January 22, 29, February 5, 12, 19 2013
- Kempe Engineering George Town March 19, 26, April 2, April 9, April 16 2013

As per the Lean Action Learning process, in each project, the team and their facilitators worked intensively together, one day per week over five weeks.

Outcomes were presented to senior management of the host company and the other participating companies on the fifth day. Key elements of each project were recorded as the basis for a case study and public presentations on the project and its outcomes.

The relevant host company then set about implementing the recommendations, in accordance with the implementation plan developed by the team. In each case the host company team members led the implementation.

Facilitators Bob Cother and Bill Woodworth visited each company at least 6 times to mentor the implementation process, ensure that the implementation was proceeding effectively and to assess whether individuals were progressing satisfactorily towards completing requirements for the Certificate IV in Competitive Systems and Practices. The duration of these visits was typically 2 to 3 hours. Visit times were scheduled so that each round of visits to the three companies could be completed over two days. This minimized cost of travel and accommodation for Bob Cother.

On October 3, 2013 each company presented the outcomes of their project at a review forum hosted by ACL Bearing Company. In each case the two “home” team members prepared and presented a powerpoint presentation outlining their project outcomes and lessons learnt. The audience consisted of senior management and other key stakeholders from each participating company, representatives from other companies interested in participating in future programs, and representatives from Skills Tasmania and DEDTA.



Figure 8: Rajesh Kulkarni (Facilitator) explaining the smelting process to the CPT Engineering project team, (L-R) Duane Bird (Tas-Fab Laser Services), Ian Harris (ACL Bearings), Bob Cother (Facilitator), Leigh Edgerton (CPT Engineering)

This forum was a good opportunity for the three companies to compare and contrast outcomes of their projects and discuss the future directions for the program. The senior managers from all three companies expressed significant satisfaction with the program and the project outcomes and a desire to further the collaboration into the future. Representatives from two other companies present at the forum expressed a firm interest in participating in the next program, as a result of what they had seen and heard.

Following the forum, project team participants were each presented with their Certificate IV in Competitive Systems and Practices at a specially convened meeting at Bell Bay Aluminium.

Cother Consulting conducted a survey of the project team participants and their managers to obtain their individual feedback on the program.

A case study has been written for each of the three projects. These are available as separate documents.

3.6 Supporting activities

In Tasmania, the Department of Economic Development, Tourism and the Arts (DEDTA) undertakes a range of initiatives to promote the application of lean business improvement processes by Tasmanian industry. Through a program of seminars and site visits local business people are exposed to the outcomes that can be achieved through the application of lean and related approaches. DEDTA also conducts interstate study tours under the Insight Program. These tours enable Tasmanian business leaders to observe best practice first hand in interstate companies.

In November 2012, with the first BALT project underway at CPT Engineering, DEDTA provided the opportunity for senior managers, action learning team members from the BALT program companies together with representatives from Skills Tasmania and DEDTA to visit Adelaide on an Insight tour. During the visit, Professor Goran Roos, a world leader in business model innovation in manufacturing conducted a half-day workshop with the group. This workshop encouraged the participants to question their business strategies.



Figure 9: Insight Tour group visit to Robern Menz in Adelaide, November 2012, (L-R) Genevieve Cother (Cother Consulting), Ian Paterson (Skills Tasmania), Geoff Watson (CPT Engineering), Rob Miley (DEDTA), Leigh Edgerton (CPT Engineering), Andrew Thompson (ACL Bearing Company, BALT Chairman), Greg House (DEDTA), Brian Lockhart (BBA), Tim Peypers (Tas-Fab Laser Services), Duan Bird ((Tas-Fab Laser Services, obscured), Ian Hutchison (BBA), Bill Woodworth (BBA), Michael McGee (Skills Tasmania), Richard Sims (Robern Menz), Ian Harris (ACL Bearing Company)

Participants also visited two companies in Adelaide that had participated in the South Australian Lean Action Learning program. These companies were B&R Enclosures (high volume sheet metal fabrication) and Robern Menz (confectionery). Both companies were able to demonstrate the outcomes they had achieved in their Lean Action Learning projects.

This tour helped build trust between the participating companies and the individual participants who were to work together in the project teams. It also provided a common vocabulary and set of examples which they could draw upon. Subsequently, on a number of occasions through the BALT

project workshops, teams referred back to ideas and practices they had been exposed to on the Insight tour when discussing optional approaches that could be taken in their projects. This demonstrates the benefit of such tours as part of the action learning process.

In May 2013, DEDTA presented a forum for manufacturing companies in Launceston. There were a number of speakers on the program including Professor Goran Roos and Christine Bridges-Taylor, General Manager B&R Enclosures. The forum included a presentation on the BALT program by a total of 8 people. These included team members from past and current projects and two managers from participating companies. Such events are effective ways of disseminating the learnings to others and reinforcing to the presenters what they have learnt and achieved.



Figure 10: Visit by forum guests and presenters to ACL Bearing Company, May 2013 (L-R) Andrew Thompson (BALT Chairman), Dan Bridges (B&R Enclosures), Chris Bridges-Taylor (B&R Enclosures), Bob Cother (Cother Consulting), Michael McGee (Skills Tasmania), Nick Juniper (Manufacturing Skills Australia)

3.7 Assessment – Evidence Gathering, Documentation and Record Keeping

It was important to record in detail all activities undertaken by participants in the program, in order to meet the assessment requirements for the Certificate IV in Competitive Systems and Practices.

The facilitator recorded notes and observations on laptop through the course of each session, as the participants worked together on the project. (In the case of the Kempe Engineering George Town project, Bob Cother observed the workshop sessions remotely via Facetime.) Session notes were circulated to team members after each session to assist them to plan the next session. Video and still cameras were also used to record activities such as stakeholder interviews, problem solving sessions, participant presentations etc.

After each session, the facilitator reviewed the evidence from the session and updated the master spreadsheet, identifying the elements addressed in the session. Where it was assessed that elements had not been adequately addressed the facilitator brought this to the attention of the

team at the following session. As required, the facilitator had individual team members explain particular aspects of the problem to test their comprehension of the issues, concepts and processes. Individual team members were also tasked with researching topics relevant to the project and making short presentations to the team.

Reflection on the effectiveness of the learning process is an important facet of action learning. At the end of each session the facilitator led a discussion on the team's performance for the day and what they had learnt from the day. These reviews were videotaped.

Results of group activities such as storyboards and brainstorming, workings on butcher's paper or whiteboard were photographed using a digital camera. In the course of the five sessions, each team gathered a significant body of company documentation and data relating to their problem. Generally this information was commercial-in-confidence but where possible samples were retained and photographed.



Figure 11: Example of storyboarding at Tas-Fab Laser Services

In the afternoon of the fifth session, the team formally presented their findings to the senior management of the participating companies and other stakeholders. In each case this took the form of a powerpoint presentation of some fifty slides, plus other documentation such as layouts and samples. Following the presentation the team fielded questions from the assembled managers and stakeholders. Each presentation was video recorded, including the question and answer session. The presentations and recordings all formed part of the assessed evidence.

Following completion of the workshops, the facilitator(s) met with each participant individually to review with them their progress and agree on further work to be carried out to complete the requirements of each unit. As the planning had shown, for the majority of units, further work would be required in the implementation phase to satisfy the requirements for the Certificate IV. Subsequently the facilitators met with each participant during their regular implementation review visits, to review progress.

For some units it was necessary to draw on other evidence besides that derived from the projects. In such cases additional project work was agreed to with the participant and evidence of competence was gathered through direct observation, demonstration, interview, report and third party corroboration.

As mentioned in the previous section, on October 3, 2013 each company presented on the implementation outcomes of their project. For each project, the two “host company” team members presented. The audience consisted of senior management and other key stakeholders from each participating company, representatives from companies interested in participating in future programs and representatives from Skills Tasmania and DEDTA. The presenters were questioned by the audience on their presentations and project outcomes. The presentations and question and answer sessions were video recorded. The presentations and recordings formed part of the assessed evidence.

At regular intervals during the program the facilitators met to review the progress of each candidate and the supporting evidence . A final validation meeting was conducted to review all assessments.

To meet the requirements of T.I.M.E., the Registered Training Organisation, records of student progress were transcribed into the format required for their systems.

In summary, the documentation for the program consisted of:

- Elements Master Spreadsheet and Unit Specifications
- Project records:
 - Project Specification
 - Project Prereading
 - Session Plans and Session Notes
 - Reference Material
 - Management Presentation
 - Other documentation
 - Skills Tasmania report
 - Videos and images
- Student records:
 - Training Plan
 - Elements Spread Sheet
 - Meeting and Mentoring Notes
 - Management Presentations (3 Powerpoint presentations)
 - Supporting Documentation
 - Additional RTO records:
 - Competency Passport
 - Unit Assessments

4. Program Outcomes and Evaluation

4.1 Introduction

This section describes the outcomes of the program for the companies, the participants and the State of Tasmania.

A review of each of the three projects and the program as a whole was conducted through the period October 2013 to January 2014. As part of the review Cother Consulting Pty Ltd conducted a survey of the participants in the program and a survey of their managers, to determine the effectiveness of the program and provide directions for future development. Summaries of the outcomes of these surveys are included in this section. The detailed outcomes of the surveys are included as Appendix 2.

4.2 Outcomes for the companies

The following tangible outcomes have been achieved by each of the participating companies.

The CPT Engineering project was focused on reducing the annual repair costs for Bell Bay Aluminium's anode rods. The use of weld-through primers for anode rod gussets was successfully tested and gussets are now being supplied from the supplier primed and ready for welding. The estimated annual savings of over \$100,000 through longer rod assembly life are expected to flow through from early next year. The introduction of new defined standards and associated training of crews at Bell Bay Aluminium has significantly reduced premature removal of rods from operational service. This has resulted in a 25% reduction in reject rate, delivering a further \$60,000 annual saving.

More significantly, during the course of the project, Bell Bay Aluminium announced that, over a period of four years they would progressively replace anode rods as they wear out with a new more energy efficient design. In a media release on February 17, 2014 Bell Bay Aluminium indicated that their intention had been to source the new anodes in China. As a result of the collaboration with CPT Engineering through the BALT program the entire fleet of 13,000 rods will now be manufactured by CPT Engineering in Tasmania. The outcome of the project meant that CPT Engineering was able to match the Chinese supplier. The skills learnt by the CPT Engineering and Bell Bay Aluminium participants in the BALT program were put to use in revising the work flow and workshop design to handle the new anode rod design. The value of this contract is \$3.7m over four years.



Figure 12: Weld through primer trials for anode rod gussets at CPT Engineering

The Kempe Engineering George Town project was focused on reducing annual refurbishment costs for Bell Bay Aluminium's pot shells. With this project the imperative was to reduce repair costs below the price of importing a new shell from China. The project team identified and implemented improvements to the delining process at Bell Bay, which was causing significant damage and improved work flow at Kempe Engineering. But the most significant saving related to the "tails" that conduct electricity into the pot shell. These were being cut off and discarded as part of the delining process. On further questioning the team discovered that the discarded tails were being replaced by new tails from China. The team saw the opportunity to recycle the old tails. After further investigation it was agreed that Kempe Engineering would set up to recycle the tails. This would achieve a \$100,000 per year saving for Bell Bay Aluminium and Kempe Engineering would regain business that had been lost to offshore suppliers.



Figure 13: Examples of pot shell "tails" previously discarded and now recycled at Kempe Engineering, George Town

For Tas-Fab Laser Services the focus of the project was to establish a shop floor information and training framework and roll this out in their Profile Cutting Department. At the completion of the program Tas-Fab Laser Services had in place standard operating procedures, a skills matrix and training plans with associated job descriptions, risk assessments, trouble shooting charts and visual aids. These can be accessed by the operators via shop floor terminals. As a result Tas-Fab Laser Services expect to see benefits in terms of accelerated development of new employees, a pathway for employees to achieve their potential and greater job satisfaction, and less time spent by the supervisor on trouble shooting to free him up to concentrate on supervision and team development.

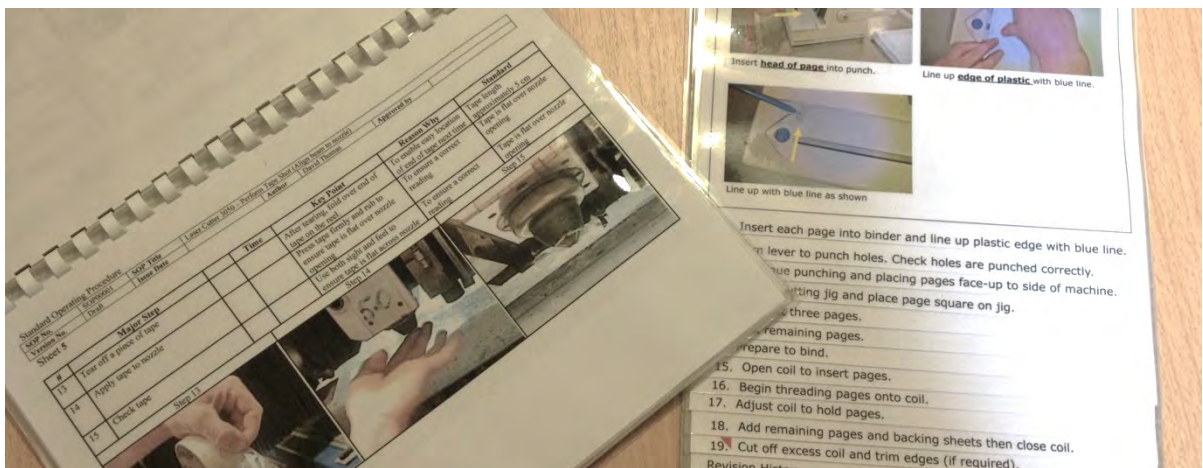


Figure 14: Examples of standard operating procedures, Tas-Fab Laser Services project

4.3 Results of company managers' survey

At the completion of the program, a survey was sent to one manager from each of the five companies. In each case this person had been the project champion or manager most closely involved with the program at that company. Four responses were obtained.

The managers expressed considerable satisfaction with the program. For all four the program either met or exceeded their expectations and all four reported that the outcomes of the particular project they had hosted either met or exceeded their expectations.

The attainment of a nationally recognized qualification by their employee was seen as "considerably" important. All four would encourage their employee to continue to a further qualification via an action learning pathway. One reported that the learning had extended to many other projects.

They offered the following comments on the best aspects of the action learning program:

- Group learning encourages input from all levels of participants.
- Outcomes gave us a good understanding of processes that we take for granted.
- Different outside eyes looking in give a better perspective of ideas.
- Clearly identified financial benefits from on-site projects. This helps gain support for further projects.
- Interaction between companies, networking and sharing ideas

They had no suggestions for improvements to the program.

Three companies were prepared to host further projects. (Circumstances with the fourth company will prevent it hosting future projects.) All were prepared to have people participate in further projects and host visits from other companies to see what had been achieved.

Two companies were prepared to have one or more of their people trained as action learning facilitators. Three managers surveyed were prepared to be members of an advisory panel to guide future development. Only one company would be prepared to pay more for the program if the level of Government funding were reduced.

4.4 Observations on company outcomes

The above evidence indicates that the BALT program achieved the outcomes sought for the participating companies, namely;

- *Improved business performance through addressing an issue of high priority.* This was demonstrated by the measurable improvements achieved and the survey results indicating that project outcomes met or exceeded managers' expectations.
- *Opportunity to learn from other companies' experiences and benefit from the fresh views of outsiders to the company.* Managers' survey comments confirm that this was achieved.
- *Enhanced competency of key employees with formal recognition for that competency.* All four managers saw the achievement of a nationally recognized qualification as "considerably" important and would encourage their employees to undertake further qualifications.

- *Development of a pattern of action learning which can be further developed and extended within the company.* The CPT Engineering project is a particular example where this took place. Another manager reported that the learning had extended to many other projects. Companies are interested in hosting further projects.

4.5 Outcomes for the participants

Six participants each participated in two project teams and then led the implementation for their home projects. In so doing all six satisfied the requirements for the Certificate IV in Competitive Systems and Practices. The following table shows the units of competency each participant achieved.

Participants 1 and 2 (CPT Engineering Project and Kempe Engineering Project)

Unit
MSS403001A Implement competitive systems and practices
MSS403010A Facilitate change in an organisation implementing competitive systems and practices
MSAENV472B Implement and monitor environmentally sustainable work practices
MSS403013A Lead team culture improvement
MSS40303A Improve cost factors in work practices
MSAPMSUP390A Use structured problem solving tools
MSS403035A Implement the visual workplace
MSS403034A Organise products into groups
MSS403051A Mistake proof an operational process
MSS402080A Undertake root cause analysis
MSS403044A Facilitate continuous improvement through the use of standardised procedures and practices
MSS403033A Map an operational process

Participants 3 and 4 (CPT Engineering Project and Tas-Fab Laser Services Project)

Unit
MSS403001A Implement competitive systems and practices
MSS403010A Facilitate change in an organisation implementing competitive systems and practices
MSAENV472B Implement and monitor environmentally sustainable work practices
MSS403011A Facilitate implementation of competitive systems and practices
MSS403033A Map an operational process
MSS403035A Implement the visual workplace
MSS403044A Facilitate continuous improvement through the use of standardised procedures and practices
MSS405012A Manage workplace learning
MSS40303A Improve cost factors in work practices
MSAPMSUP390A Use structured problem solving tools
MSS403034A Organise products into groups
MSS402080A Undertake root cause analysis

Participants 5 and 6 (Tas-Fab Laser Services Project and Kempe Engineering Project)

Unit
MSS403001A Implement competitive systems and practices
MSS403010A Facilitate change in an organisation implementing competitive systems and practices
MSAENV472B Implement and monitor environmentally sustainable work practices
MSS403011A Facilitate implementation of competitive systems and practices
MSS403030A Improve cost factors in work practices
MSS403033A Map an operational process
MSS403035A Implement the visual workplace
MSS403044A Facilitate continuous improvement through the use of standardised procedures and practices
MSAPMSUP390A Use structured problem solving tools
MSS405002A Analyse and map a value stream
MSS405030A Optimise cost of product or service
MSS405031A Undertake value analysis of a product or process costs in terms of customer requirements

For four of the six participants, Year 10 was their highest level of formal education prior to undertaking the program. These people performed as well as those with higher qualifications.

Analysis of the video evidence collected through the program reveals the development of each individual. As an example, through the course of the program participants were each required to make three presentations to senior management and stakeholders. In most cases they had never made such a presentation before. The video evidence shows how in all cases, the individuals progressively developed their confidence.

4.6 Results of participants' survey

For all six participants the program either met or exceeded their expectations. They offered the following comments on the best aspects of the program:

- Working with others in industry
- Being in the workplace and being able to move from classroom to assess workplace when required
- Opportunity to have constructive discussions with suppliers with backup and fresh eyes of the project team.
- Facilitator note taking and sharing
- Real outcomes
- It was hands on
- Teaching me new skills
- Having supplier and customer working together

Aspects they saw as most in need of improving were:

- Condense the time of training
- Free up time at work place to accommodate extra workload required to fit the course in
- Electronic equipment.

All six saw action learning as “quite effective” or “very effective” in developing their skills. All saw the knowledge and skills learnt as “useful”, “very useful” or “essential”. All saw action learning as “more effective” or “much more effective” than traditional classroom learning.



Figure 15: Duane Bird (Tas-Fab Laser Services), Ian Harris (ACL Bearing Company), CPT Engineering project

In respect to their keenness to be involved in future action learning projects, one was “not very keen”, two were “mildly keen” and three were “very keen”.

Participants were asked to assess the performance of their teams and their own performance in those teams. For their “home” projects all six thought that their team worked “effectively” or “very effectively”. Their personal contribution to the team had been “effective” or “very effective” and they had been “satisfied” or “highly satisfied” with the outcomes of the project.

For the “away” projects all thought their team worked “effectively” or “very effectively”. One person thought their personal contribution to their “away” team had been “not very effective”. The other five rated their contribution as “effective”. All were “satisfied” or “very satisfied” with the outcomes of their away project.

All participants placed “moderate”, “considerable” or “high” value on achieving the Certificate IV in Competitive Systems and Practices. Three were “not very keen” or “mildly keen” to pursue a further qualification. Three were “very keen”. Two were “not very keen”, three were “mildly keen” and one was “very keen” to pursue a Diploma qualification.

Participants were questioned on the proportion of time spent on different activities during the projects; where more time should have been spent, where less time should have been spent and where the time spent was about right. For each of the ten categories of activity a clear majority saw the time spent “about right”.



Figure 16: (Clockwise from top left) Ian Hutchison (BBA), Leigh Edgerton (CPT Engineering), Rajesh Kulkarni (Facilitator, obscured), Duane Bird (Tas-Fab Laser Services), Ian Harris (ACL Bearing Company), CPT Engineering project

The facilitators were rated on “relevant knowledge”, “communication”, “organisation” and “overall effectiveness”. A majority rated the facilitators “excellent” in each case, with the remaining ratings “good” or “satisfactory”.

One participant took advantage of the opportunity to make “any other comments” at the end of the survey. His comment was:

“Bob and Bill showed faith in the group’s ability to capture and solve cost saving and process improvement ideas from the start of the project. In the beginning the teams didn't share the same confidence but built on ideas brought up in discussions and eventually found very worthwhile and solvable cost saving and improvement targets.”

4.7 Observations on participants’ outcomes

The above evidence indicates that the BALT program also achieved the outcomes sought for the individual participants, namely;

- *Development of action learning skills.* The survey results relating to personal and team effectiveness, degree of satisfaction with project outcomes and degree of satisfaction with the action learning process indicate that this outcome was achieved.
- *Achievement of competencies which will enhance their career prospects, enhance the contribution that they can make to their company’s performance, and achieve formal recognition against the Australian Qualifications Framework.* Six candidates achieved the Certificate IV in Competitive Systems and Practices. The survey results relating to the usefulness of skills learnt together with the outcomes of the managers’ survey indicate that the competencies achieved will enhance their career prospects.

4.8 Outcomes for the State of Tasmania

The outcome sought by the State of Tasmania from the BALT programs was:

- The prototype of a strategy to promote collaboration between companies and across industry sectors to advance the performance of industry in the State and raise the skills of the workforce.

To date over the two BALT programs six companies have participated. They come from diverse industry sectors; dairy, automotive components, aluminium smelting and metal fabrication. These companies have worked in close collaboration and as a result have already realized some significant business benefit from their collaboration, including winning some \$4 million of work for Tasmania that would otherwise have gone offshore. Over the two programs, twelve people have achieved a nationally recognized qualification. Numerous others of the companies’ employees have benefited from their involvement.

As a prototype of a strategy to promote collaboration BALT has been successful. The BALT Co-ordination Team have worked very effectively together. It has been a low key but very practical example of what can be achieved by industry and government working together for a common purpose. The BALT Co-ordination Team have a clear and considered strategy to expand the program in Tasmania:

- Consolidate the program in the Tamar Valley
- Extend the program in the Cradle Coast Region
- Extend the program to the Hobart Region

There are already three companies keen to commence the program in the Cradle Coast Region. Their projects are well defined and their participants have been chosen. A submission has been made by BALT to Skills Tasmania for funding. The companies have agreed to participate as members of the BALT Co-ordination Team.

There are a number of good prospects for a third program in the Tamar Valley and Bell Bay Aluminium are keen to help facilitate that program. BALT has plans to promote the program in the Hobart region in the near future.

It is reasonable to claim that the outcomes sought by the State of Tasmania are being met.



Figure 17: (L-R): Duane Bird (Tas-Fab Laser Services), David Thomas (Tas-Fab Laser Services), Ian Harris (ACL Bearing Company), Nick Williams (Kempe Engineering, George Town) at Tas-Fab Laser Services

4.9 Evaluation of where BALT stands in the world of action learning

Independent of this report, Cother Consulting undertook a literature survey to assess where the BALT initiative stands in the world of Action learning. How do BALT programs compare with other action learning programs reported in the literature? Are there aspects of BALT that would be of interest to the world? Are there aspects of others' programs that could be adopted and adapted to further enhance BALT programs?

The literature survey is available as a separate document. The conclusions of the literature survey are included here.

Various features of the BALT program taken individually have precedents in other programs reported in the literature. The particular way in which these are brought together as an effective model is possibly unique. BALT programs achieve effective outcomes for organisations and individuals as shown by survey outcomes and measurable project outcomes. This suggests that the design of the program is well founded and would be of interest to those wishing to conduct similar programs in other regions. The fact that the BALT program enables participants to achieve a nationally recognised qualification entirely by action learning is possibly unique in the world.

Based on the literature survey a number of enhancements could be made to BALT programs to further improve their effectiveness. These have been included in the recommendations of this report.

5. Conclusions and Recommendations

5.1 Conclusions

- The BALT program achieved the outcomes sought, for the individual participants, participating companies and the State of Tasmania. The companies achieved significant business benefit from their collaboration, including winning some \$4 million of work for Tasmania that would otherwise have gone offshore. The six participants achieved a Certificate IV in Competitive Systems and Practices.
- It is feasible for the facilitators of BALT projects to be sourced from within the ranks of the participating companies providing the companies see some direct business benefits from the projects they facilitate.
- Remote observation, assessment and mentoring of action learning teams via Skype, Facetime or similar technology is feasible providing there is a good wireless internet connection at either end. Remote facilitation would not be feasible for a novice action learning team but may be feasible with a team of experienced action learners.
- As a prototype of a strategy to promote collaboration the Business Action Learning Tasmania program has been successful. The BALT Co-ordination Team have worked very effectively together. BALT is a practical example of what can be achieved by industry and government co-operating for a common purpose.
- The design of the program is well founded and would be of interest to those wishing to conduct similar programs in other regions of Australia and around the world.
- The fact that the BALT program enables participants to achieve a nationally recognised qualification entirely by action learning is possibly unique in the world.
- The BALT Co-ordination Team has a clear and considered strategy to expand the program in Tasmania. If these plans are realised, over the next two to three years the BALT program could achieve international significance as a model for industry collaboration.

5.2 Recommendations

- Consolidate the program in the Tamar Valley and extend the program into the Cradle Coast and Hobart regions, in line with BALT's strategic plan.
- Develop more local qualified facilitators drawn from participating companies. Integrate their training and qualification with BALT programs. Establish a virtual learning community for continuing support and professional development of facilitators
- Introduce "multiple-problem action learning" into the implementation phase of programs, with participants meeting periodically as a cohort or action learning set to compare and evaluate their experiences as they lead their implementations.
- Introduce learning logbooks and end of session storyboarding, together with more detailed surveys conducted throughout the program, to encourage more effective reflection.
- Provide virtual conferencing facilities for teams eg GoToMeeting, WebEx or teleconferencing to facilitate team meetings outside face-to-face sessions and meetings with remote stakeholders and technical experts
- Engage a wider cohort in analysing processes and brainstorming solutions by selectively sharing, via the internet, videos of processes under examination by project teams and inviting ideas and suggestions from the wider alumni.

- Conduct a series of supporting events through the course of a program to enable participating companies to continue to engage with each other, in particular the senior managers.
- Establish a pilot self-managed action learning program. Participants in this program would have successfully completed a Certificate IV in Competitive Systems and Practices through participation in a BALT program, and have been identified by management for further leadership development. They would be candidates for a Diploma in Competitive Systems and Practices. Employ remote observation, mentoring and assessment as part of this pilot program.
- Selectively offer places to undergraduates in BALT project teams to provide them with an industry-based learning experience and to build links between industry and universities.
- Consider including academics, TAFE and secondary teachers in BALT project teams to participate as team members.
- Further enhance links between industry and universities by conducting a parallel BALT program with multi-disciplinary action learning teams, comprised entirely of students, working on projects sponsored by companies.
- Broaden the scope of BALT projects to include projects focused on innovations in product, marketing and distribution.
- Conduct an over-arching action research project to compare and contrast the effectiveness of action learning reflection versus competency-based assessment in identifying and evaluating the learning outcomes of action learning projects.
- Engage with organisations, industry bodies and institutions around the world that conduct similar programs, to share experiences and ideas, for mutual benefit.

APPENDIX 1: Project Specifications

Tasmanian Lean Action Learning Program

Project Specification

Project Outline

Host Company:

CPT Engineering
Thompson Avenue
George Town
Tasmania

Contact:

Geoff Watson,
Managing Director
Telephone (03) 6382 3333

Background

CPT Engineering is a metal fabrication and general engineering company located at George Town, Tasmania.

CPT have a major ongoing contract to repair 1000 Anode Rod's per month for Bell Bay Aluminium (BBA).

BBA has a fleet of 13,000 Anode Rod Assemblies used in the Anode Rod Process. Below standard rods are removed from the Rodding Room, transported to CPT, repaired (or scrapped) & returned to the Rodding Room.

BBA spends in excess of \$1m on rod repair annually. An opportunity exists to improve this process reducing the cost of Rod Repair.

Project Scope

- The project scope relates to the anode rod repair process and the transport process to and from CPT Engineering. The project scope does not include anode rod design and structure

Project Objectives

- Analyse the current process for anode rod repair and transport to and from CPT engineering
- Recommend and justify improvements to the process, that will reduce the cost of the process by \$200,000.

Project Arrangements

The program will run one day per week for five weeks, on the following dates:

November 13, 20, December 4, 11, 18

Sessions will run from 8 am to 4 pm

There will be a preliminary meeting on the evening of November 12 (subject to confirmation) at 4pm to introduce and brief the team.

Team members will be:

- Leigh Edgerton – CPT Engineering
- Ian Hutchison – BBA
- Ian Harris – ACL Bearings
- Duane Bird – Tas-Fab

CPT Engineering will provide a meeting room for use by the team on the days that they are on the premises

CPT Engineering will allow video taping and photographs of team activities, for the purpose of producing a video case study and written case study of the project. CPT Engineering and Bell Bay Aluminium will be consulted on the final content to ensure that no confidential material is included.

Project Demonstration Attributes

- Value stream mapping and waste identification across the whole supply chain
- Forecasting and scheduling
- Load levelling
- Flow processes
- Layout
- Material handling
- Visual management
- Team development
- Supplier integration

Tasmanian Lean Action Learning Program

Project Specification

Project Outline

Host Company:

Tas-Fab Laser Services

4 Forster st

Invermay

Launceston 7248

Contact:

Tim Peypers

Managing Director

Ph. 6331 4255

Email: tim@tas-fab.com

Background

Tas-Fab supply a range of machine shop services including laser cutting, metal fabrication and powder coating.

Tas-Fab Profile Cutting Department is a major portion of the company's capability

Tas-Fab aims to:

- Systematically develop the skills of their operators in the Profile Cutting Department
- Provide their operators with the information and systems support to enable the operators to be as effective as possible in their job roles
- Maximise value adding and minimise waste

Project Objectives

The project objective is to establish a framework for:

- Job definition and skills required for the job
- Processes for:
 - Assessing current skills
 - Establishing development plans for individuals

- Planning and sourcing training (internal and external)
- Documentation required at the workstation and format of that documentation (eg web based)
 - Standard operating procedures
 - Trouble shooting lists etc
- Visual management and visual communication at the workplace
- Integration with the TKO system

Project Goals

- Within the five week program to have developed the framework using the laser operator job role as the prototype
- Within six months to have rolled this framework out across the Profile Cutting Department

Project Arrangements

The program will run one day per week for five weeks, on the following dates:

January 22, 29 February 5, 12, 19

Sessions will run from 8 am to 4 pm

There will be a preliminary meeting on the evening of January 21 (subject to confirmation) at 4pm to introduce and brief the team.

Team members will be:

- Duane Bird – Tas-Fab
- Ian Harris – ACL Bearings
- Nick Williams – AP Kempe Engineering
- Brian Lockhart – Bell Bay Aluminium
- David Thomas – Tas-Fab

Tas-Fab will provide a meeting room for use by the team on the days that they are on the premises

Tas-Fab will allow video taping and photographs of team activities, for the purpose of producing a video case study and written case study of the project. Tas-Fab will be consulted on the final content to ensure that no confidential material is included.

Project Demonstration Attributes

- Job roles and skill sets required for lean
- Information required to support value-adding employees
- Impact of skills and information systems on maximising value adding and eliminating waste in production systems
- Application of lean tools and techniques for this purpose

Tasmanian Lean Action Learning Program

Project Specification

Project Outline

Host Company:

Kempe Engineering George Town

Contact:

Viv Pearce

Director

Ph. 0407687909

Email: vivianp@kempe.com.au

Background

- Bell Bay Aluminium has 558 reduction cells (pots) in service, typically 150 require relining and refurbishing each year.
- Once the failed refractory lining is removed from the out of service pot, the steel shell is sent to Kempe's workshop for refurbishing.

Project Objective

The project objective is to improve this process reducing the cost of cell reconstruction.

Project Arrangements

The program will run one day per week for five weeks, on the following dates:

March 19, 26, April 2, 9, 16

Sessions will run from 8 am to 4 pm

There will be a preliminary meeting on the evening of March 18 at 3.30 pm to introduce and brief the team.

Team members will be:

- Nick Williams – A.P. Kempe
- Brian Lockhart – BBA
- Ian Hutchison – BBA
- Leigh Edgerton – CPT Engineering

Kempe Engineering will provide a meeting room for use by the team on the days that they are on the premises

Kempe Engineering will allow video taping and photographs of team activities, for the purpose of producing a video case study and written case study of the project. Kempe Engineering will be consulted on the final content to ensure that no confidential material is included.

Project Demonstration Attributes

- Value stream mapping and waste identification across the whole supply chain
- Forecasting and scheduling
- Load levelling
- Flow processes
- Layout
- Material handling
- Visual management
- Team development
- Supplier integration
- Local self sufficiency

APPENDIX 2: Employer and Participant Survey Results