



"I was introduced to Lean during the first End-to-End activities and involved with a six-month pilot project within the General Engineering Flight at RAF Lyneham, which began in Sep 03. Since then, the station has applied Lean thinking in several areas including aircraft servicing, supply chain, mechanical transport and more recently, pharmaceuticals within Tactical Medical Wing.

"To me, the secret to successful Lean transformation, is to work from the bottom up to change the culture of the organisation to reflect the new ways of operating. This means regulating behaviour between sections and organisations and having transparency in all the steps taken along the agreed Lean value stream. To make Lean work, each participant must be confident that the other departments are behaving in accordance with the agreed principles.

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Put simply, Lean is about people understanding and believing in the change they are being asked to undertake. People frequently feel that Lean is done to them, and the right level of support and direction for implementing sustainable change at unit level is often fundamentally lacking. At a strategic level, there has clearly been significant success and this is where the expertise has been justifiably concentrated. However, there does appear to be a significant gap between the two and we need to work hard if we are to close that gap.

"I have received feedback from other units and organisations on the lack of direction and support provided to Station Change Teams and it's disappointing that there appears to be poor reward or accreditation for those who have put a lot of effort into Lean. I think our change agents need to be better managed, developed and retained if an in-house capability is to be established and sustained. On the other hand, it is good to see the new Lean training courses being introduced at Shrivenham.

"Perhaps it would help if, during this period of major transformation, we consider extending tour lengths in order to apply longer-term thinking and decision-making when implementing improvements. Pressure to achieve results in a relatively short period of time is not always conducive to long-term sustainability and continuity. All too often, the same errors are repeated through poor communication and lack of transparency between units, sections and other organisations; we need to learn from these lessons.

"Leaning an operation or task is relatively easy, the major challenge is to win the confidence and co-operation of the people we are asking to implement the change and make it stick."



Chief Technician John Graffen is the Station Lead Change Agent at RAF Lyneham and a self-confessed convert to Lean. He's responsible for the broadening of Lean thinking and application across the Station and beyond. John provides a SNCO's perspective of Lean and logistics transformation.

STOP PRESS - PRIMING EQUIPMENT PACKS (PEPs)

The latest step in rolling out the concept of PEPs to the Army was demonstrated at The Prince of Wales's Own Regiment of Yorkshire (1 PWO), at Somme Barracks, Catterick on 14 Sep.

A PEP, containing three days of sustainment materiel, was delivered to 1 PWO to sustain the unit during Exercise Loyal Ledger, a UK exercise involving 9000 personnel and 4,500 vehicles that takes place from 17 Oct to 5 Nov 05.

The PEP was assembled at the Defence Storage & Distribution Agency (DSDA) using new unit-level scales and delivered in 25 ISO containers for security and protection from the weather. Each ISO was labelled and configured so that 1 PWO could readily identify what was inside each one and lay out all 25 on the parade square. This allowed the 1 PWO Quartermaster, Captain Greg

Peck, to co-ordinate distribution down to company and individual soldier level. Greg says: "I think PEPs are a good thing and will work. The nitty gritty needs sorting out, but by being well prepared and taking our time to assemble the right containers in the right place, issue to the unit will be easier."

The scaling of the PEP is a key activity and ensures that the unit is provided with what they really need to deploy. For instance, the PEP contained just enough equipment spares for the thousands of vehicle faults predicted to occur during the exercise and, for the first time an illustrative scale of live ammunition was included.

The aim of PEPs is to provide a 'get you into theatre' pack for deploying units. The centrally prepared and agreed scales are delivered to their peace-time location before they deploy, thereby removing unplanned demand pressure on the supply chain. PEPs are carefully configured and assembled, tailored to the type of unit, mission and environment. Most importantly, PEPs deliver more of the right materiel in the right quantities, at the right time.

A full account of the PEP trial will appear in a later issue of Driving Change.



Capt Gregory Peck



Lean Medics at Lyneham

In a radical change of thinking on medical logistics, Tactical Medical Wing (TMW) at RAF Lyneham aims to reduce the holdings of pharmaceutical, medical and dental equipment from £3.5M to £633,500.

TMW provides support to exercises and medical equipment and drugs for aero-medical evacuations to deal with injuries caused in areas of military conflict.

The Lyneham Change Team, Chief Tech John Graffen, Sgt John Muir, Sgt Bob O'Brien and Cpl Dave Salmon, was asked to review TMW's working practices. At first glance, the team was struck by the huge amount of inventory and the significant cost attached to it.

John Graffen says: ***"The Medical Logistics team was frustrated because it recognised that the vast majority of the £3.5M stock just sat on the shelf adding no value. Naturally, they were sceptical towards the project, until the change team explained that they had a fantastic opportunity to re-shape the current process for the better. The entire TMW workforce was involved from the beginning and their ideas and opinions were sought throughout the transformation process."***

The £3.5M worth of stock was held to cover any eventuality. The change team sifted an enormous amount of data to prove that a stockholding of no more than £633,500 was essential to provide cover for military exercises. From an original total of 402 medical modules (configured packs of drugs and equipment), only 97 were essential for exercise purposes, therefore stock could be reduced by as much as £2.9M.

Overall responsibility for the pharmaceutical stock lies with HQSTC and an agreement to reduce the stock was endorsed in Jun 05. This is expected to be over 50% in the medium term and stock levels will be reviewed on a regular basis. An inventory reduction of £278,000 has already been realised, creating valuable floor space in TMW.

Flight Sergeant Jason Payne, SNCO IC Med Logs says: ***"We have been able to reduce the holdings of one type of module from 35 down to 10. The electrical equipment in each module takes a day to service and has to be done twice a year. By reducing our holdings, we can free up effort for other essential tasks."***

"By getting rid of unnecessary modules and focusing on those essential to support ops and exercises, we have not only improved the working environment, but given ourselves some thinking time and become more efficient in the process"

The cost of maintaining the pharmaceutical stock over three years is £1.5M, and £1.26M of this was the cost of disposal of drugs returned from overseas deployment. This is because drugs must be kept at a controlled temperature (15°C–25°C) at all times, otherwise they are deemed unfit for purpose and have to be incinerated even though they are not life expired. STC is currently looking into leasing a deployable temperature control unit for planned exercises. This will save additional money in routine maintenance and disposal costs.

TMW is in the process of redistributing the surplus stock to Army field hospitals and this should all be dispersed by the end of the year. All of these changes will improve the efficiency and effectiveness of the service TMW provides in support of exercises and to personnel injured in conflict.



Flight Sergeant Jason Payne

TMW stands by its new vision:
- reduce excess inventory and radically improve quality, cost and delivery to the customer.

Best Foot »Forward»

In late August, HQSTC and the Tornado IPT implemented major changes to the way logistics support is provided to the Forward support element of Tornado GR4 and F3.

Trials conducted in 2004 at RAF Lossiemouth and RAF Leuchars redefined the number of personnel required to deliver Forward support, while also contributing to the development of new and more efficient Lean processes. Three types of Forward activity have been leaned; aircraft See-in and See-off, Hardened Aircraft Shelter (HAS) Operations, and Flight Servicing.

The reception and dispatch of aircraft is known as See-in and See-off. This process, traditionally performed by two producers and one supervisor, has now been reduced to one producer. To ensure safety and efficiency are not compromised, one supervisor oversees three one-man See-offs on the flight-line, while in the HAS, one supervisor is assigned to each See-off. These reductions have been achieved through a review of procedures to remove duplicated and wasteful processes and ensure that tasks are conducted in the most efficient manner. More importantly, by reducing to one man there is no ambiguity about who should complete the checks. This further enhances flight safety and is in short, a win-win situation.

Cpl Al Young from, 14 Sqn Training Cell at RAF Lossiemouth says: *"We are now teaching the single-man See-in and See-off procedure in 14 Sqn and are happy with the results. We keep in regular contact with the Tornado IPT and are recommending further improvements."*

SAC Don Fraser who has been trained in Single Man Line operations explains: *"The single-man procedure is allowing manpower from the flight-line to be freed up for fault rectification and other tasks. The procedures*

have also allowed me to take complete ownership of the task. Not having to worry about the 2nd man, check his activities and try to pass information to him by hand signal, is a big bonus."

Tornado squadrons routinely operate from both the flight-line and HAS and this review has provided the opportunity to introduce common, single-producer See-in and See-off procedures for both locations.

The single-producer See-in and See-off procedures will significantly reduce manpower requirements for aircraft handling. However, the full benefits of this initiative would not have been realised without a fundamental review of flight servicing activities. Flight servicing, originally a 1st line and now a Forward activity, comprises of before-flight and after-flight checks, and turnaround activities including the replenishment of consumables. Traditionally, flight servicing turnaround was a series of tasks that took two people about 45 minutes. The review has reduced the number of

tasks by around 40%, and now one person can perform the turnaround servicing in 45 minutes or less.

Dave Robinson of the Tornado IPT says: *"Each of the servicing tasks removed from the turnaround schedule was subject to a rigorous review process, and our goal was to remove as much as we could from the schedule without compromising the airworthiness of the aircraft. Through various workshops, key stakeholders worked closely to develop and improve the revised procedures. The result will enable the squadrons to continue to provide the current level of support, but with fewer producers. Although there was initially some scepticism over the proposals, feedback about the trials from air and ground crews has been encouraging, with most producers welcoming sole responsibility for the handling activity"*. By leaning the Forward support process, the number of personnel required to support deployed operations (the deployed footprint) can be reduced. Changes underway in Tornado will deliver a reduction in posts of around 160 on GR4 and 60 on F3. This contributes to the overall RAF manpower reduction targets, whilst maintaining or increasing Forward support effectiveness.



Leaning Support for Warrior

A partnership formed between the Light Armoured Systems Support (LASS) IPT, the Lean Support Continuous Improvement Team (LSCIT) and HQ Land Command, has demonstrated what can be achieved to improve delivery of true End-to-End support.

A joint LASS & LSCIT project was started earlier this year to help the IPT improve current Warrior support arrangements. It identified that internal process improvements were needed to optimise the IPT working practices. This will enable them to understand and employ Lean principles to generate process improvement ideas and deliver optimum support to the front-line.

This joint project has three work streams; investigating and improving the Warrior engine repair process, examining the vehicle selection process for depth overhaul at ABRO and, working with HQ Land to improve Equipment Care (EC). **Together, these improvements are expected to save in the region of £7M over the next four years.**

Although base overhaul of Warrior is undertaken by ABRO, Warrior engine repair is mainly performed by Caterpillar and represents 145 engines at a total cost of £3.1M. A key element of improving the repair process is the introduction of Oil Health Monitoring (OHM) to the Warrior fleet. OHM gives the team and users access to valuable data on oil contamination,

“Warrior depth turnaround time has been reduced from 107 to 72 days, saving £3M over three years.”

providing the ability to predict potential engine failures that would normally result in expensive repair. Changes to the engine build standard have been recommended as a result of the project, ensuring that repair is meeting customer requirements and best value for money is achieved by the IPT.

The overhaul workstream is focusing on providing the best and most realistic input to ABRO, supporting the robust lean work that has already taken place. Over the last 24 months, the number of Warriors in the repair loop at ABRO has reduced from 80 to 60, helped by an improved selection process which only overhauls those vehicles that need it. Also, Warrior depth turnaround time has been reduced from 107 to 72 days, saving £3M over three years. Overall, more than 40 Warriors have been released to the front-line.



Warrior availability on the front-line, is being addressed through improved EC and changing the mindsets and behaviours of the users, so that routine maintenance including oil and essential fluid checks, is performed regularly. This simple change will go a long way to reducing failures and improving availability and reliability. To support this, HQ Land Command's EC policy has been reviewed and re-issued, encouraging all commanding officers to improve EC standards Army-wide. This will be supported by EC symposiums and an information campaign using British Forces Broadcasting Service (BFBS) and Soldier magazine.

By addressing all aspects of Warrior support from the Army driver on operations, to the maintainer in ABRO, visible and meaningful improvements are being achieved. The LASS improvement team consists of Peter Davidge, Iain Murray and Mark Alston, working with Emma Wetmore and Steve Oakley from LSCIT.



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Defence Logistics Transformation Programme (DLTP)

'Theory Underpinning the Delivery - Masterclass #1'

In this issue of Driving Change we provide a 'Masterclass' explaining the background to the programme and its underlying objectives and principles. Future editions will include details of the governance for and outcomes of the programme.

The DLTP was launched on 1 Apr 04 and brings together the successful DLO Change Programme and the End-to-End (E2E) Logistics Review in the Land and Air Environments. The DLTP broadens this work into other areas of the DLO, including Maritime and into the Front-Line Commands.

Delivering effective logistics support for operations is a key enabler to the conduct of modern, expeditionary warfare. The DLTP has three Objectives; to improve the effectiveness, reduce the costs (efficiency) and improve the flexibility of logistics for operations. In his capacity as the logistics process owner for Defence, CDL is charged with delivering a single, pan-Defence programme of logistics transformation activities.

There are four cross-cutting Approaches employed as levers across all environments to deliver improvements in effectiveness and efficiency:

- **Through-Life Management:** Providing logistics support for a platform or equipment from requirement, through design, manufacture, delivery and in-service use and final disposal. This requires a better, shared understanding of Through-Life costs and support arrangements.
- **Application of Lean Techniques:** A Lean system delivers what is required when it is required, but no more, through streamlining organisational boundaries, removing duplication and eliminating excess capacity.
- **Right People, Right Skills:** Investment in people is critical to gaining the necessary competences and skills to deliver transformation. Institutionalising Lean and the

introduction of essential training will ensure sustainable delivery of more effective logistics support.

- **Optimisation of Industry:** Future support solutions must reflect the optimum balance of operational risk, incentivisation, agility, dependability and cost, across the Through-Life and End-to-End domains, to deliver all elements of logistic support.
- The seven key DLTP principles are:**
- **Configure for the Most Likely.** Policy dictates that we must configure our forces and logistics for the most likely operational scenario, but ensure there is the ability to deliver against the most demanding. Current logistics support is geared towards a major conflict, whereas modern expeditionary operations are of a smaller scale and in greater number.
 - **Concentrate Resources and Materiel.** We will concentrate resources and materiel at a logistics centre of gravity where they can deliver the required effects as flexibly, effectively and efficiently as possible. In Air, this means concentrating Depth Support for a particular aircraft onto a single operating base.
 - **Apply the Forward-Depth Concept.** The traditional four lines of logistic support is being reformed into a simplified two-level construct: Forward and Depth, with clear responsibilities undertaken by the front-line commands and the DLO for each.
 - **Minimise the Deployed Footprint.** We must minimise the Deployed Footprint, drawing resources back to the point where they can be used most efficiently,

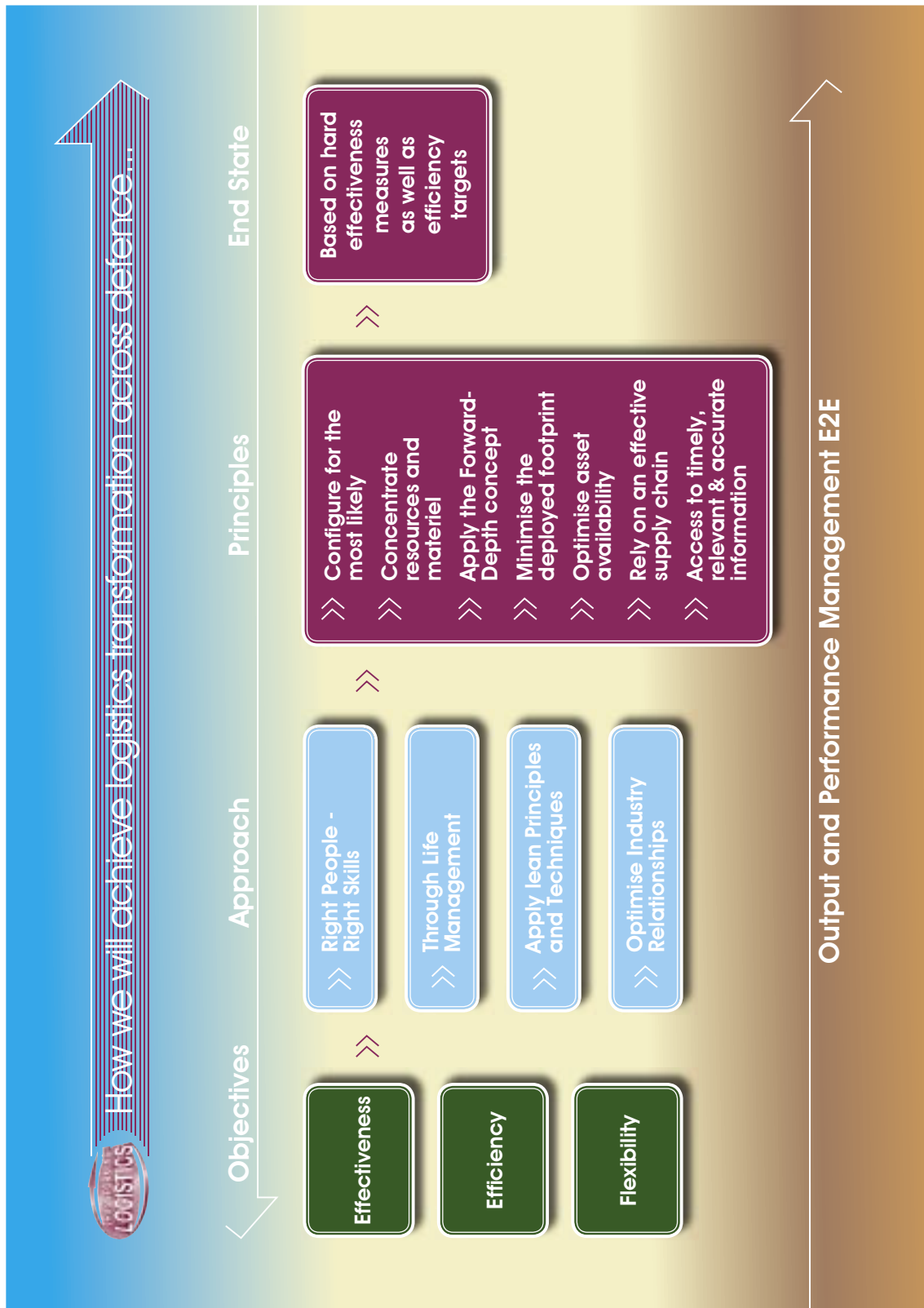
thus reducing the volume of in-theatre logistics support.

- The Improved Support to a Brigade (ISTAB) initiative in Land, will examine optimum force structures, rebalance support and introduce Lean to reduce the size of deployed forces.
- **Optimise Asset Availability.** More effective asset management, asset tracking and exploiting reliability-centred and condition-based maintenance techniques to improve overall availability and reduce holdings and costs.
 - Partner with industry and incentivise them for the delivery of equipment and system availability - **Pay for Use, not Pay for Repair.**
- **Rely on an Effective Supply Chain.** Creating an effective, integrated End-to-End Supply Chain drives the whole of the logistics system and the underlying culture and behaviour. Every element of the Supply Chain has to play its part, from the UK depots and transportation, into the operational theatres.
 - Op TELIC – Delivery in-theatre reduced from 4-7 days to 1-2 days.
 - The Defence Storage and Distribution Agency is reducing delivery time in the UK and north west Europe from 30 to 7 days.
- **Have Access to Timely, Relevant and Accurate Information.** Access to better logistics information is key to the ability to transform logistics support. It will also enable better forecasting and planning, the identification and reduction of risk and enable better decisions to be made.

“The DLTP has three Objectives; to improve the effectiveness, reduce the costs (efficiency) and improve the flexibility of logistics for operations.”

Defence Logistics Transformation Programme (DLTP)

'Theory Underpinning the Delivery - Masterclass #1'



The next Masterclass #2 will highlight the effectiveness outcomes.