



ReleaseFour

# digital frontier

The Training Technology Newsletter

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## Welcome



Welcome to Digital Frontier Issue #4. Without a doubt the focus of our publication is upon new and emergent technologies and how they interface or underpin how we learn in the NZDF. However the implementation of new capability in the form of software or tools such as Virtual Reality (VR) is only part of the equation. The initiation and adaptation of new ideas or techniques to enhance Individual Training & Education (IT&E) in NZDF often comes from SMEs who find themselves in an instructional role for the first time.

This progression from technical expert to teacher is something that many personnel struggle with. Often their first point of reference is to reflect upon the learning materials that need delivering and to recall how little (or how much) things have changed since they undertook the same training some years ago.

Many of the SME/Instructors we encounter through our projects are motivated by an opportunity to do things better than before. They may have encountered a new instructional technique or some new capability through an overseas posting or contact with one of our partner defence organisations. We often hear from some of our more senior personnel that they are

perplexed at how their own children are using advanced technologies, mobile devices and web or cloud based solutions to learn at school. The next obvious question is why can't we do that in the NZDF?

In short, we can and we are but it all takes time. In my travels around our bases and camps, and overseas to meet with other military educators I am constantly reassured by the fact that as a relatively small defence force we maintain an agility and willingness to change and adapt when necessary. The personnel who we engage with to develop innovative learning experiences and tools are often open to trying new ideas that we may adapt from industry, education or other defence forces. Even though we have to take the time to assess risk, play by the rules (Policy) and get approvals (Chain of Command), often we get there in the end.

In this issue we have included some interviews from SMEs and Instructors we have worked with recently. We hope this may give you the opportunity to consider asking the hard questions about how your learners will improve their knowledge, skills and attitudes when they are next in your charge.



If it feels like 'Groundhog Day' in your classroom or that task book is the same one you used when you trained and you would like to explore a new approach then think about getting in touch with NZDC through the Learning Tool Kit or contact our TT team directly for a chat.

If you are new to our publication, Haere mai! This is the first time we have published directly via the ILP Homepage but our first three back issues are available through the same link.

Nga mihi nui

*Martin* 

Martin Boulton  
Team Leader  
Training Technology

## 01. // I/ITSEC 2017, Orlando, Florida plus Washington D.C. Visit



### I/ITSEC Interservice Industry Training Simulation & Education Conference



#### Connecting Learning Technology and Learning Science

So there I was bumping along in a HUMVEE over a narrow dirt trail approaching a small village. Up ahead through a small clearing a white utility vehicle came into view and was travelling toward us at high speed. Our driver decided to leave the trail to seek cover behind the buildings to our right, then as we lurched sideways a new contact was made and the heavy machine gun above me gave a loud burst that shook the cabin.....

The quality of full immersion simulators is something to behold. My visit to the Lockheed Martin Sim Centre in Orlando truly set the scene for a busy week of meetings and new learning in the world of mod-sim at the annual I/ITSEC conference in Florida. I/ITSEC claims the status of the world's largest modelling and simulation conference. While the Exhibit Hall resembles the set of a Transformers movie, the upper level

seminar rooms host nearly 300 parallel educational sessions and workshops over four days. Indeed there are so many that you have to download an App to plan your conference experience.

Part of my role in NZDC is to ensure that when we use the latest learning technologies e.g. VR, simulators, e-learning, that we also consider how that technology impacts the way we learn. NZDF is going through somewhat of a digital renaissance as we see the roll out of new tools, systems, practices and policies such as LMS, DDMS, SOLO, CIS Cloud First policy etc. The next few years could see the transformation of how we access learning and in turn exploit data to achieve improved learning outcomes. Exciting times ahead!

"Each visit revealed the common challenges large organisations are experiencing in maintaining learning currency in the face of the relentless onslaught of tech".

Continued ►







US Marine Corp ask NZDF to share its Individual Learning Strategy as they saw value and alignment with their own learning policy development. The National Park Service also highlighted a number of synergies and offers to share resources. NPS is about to launch their completely remodelled Total Learning Architecture (LMS plus). Like the NZDF, they have a large population of learners (18000) widely distributed across the United States. NPS uses their LMS in innovative ways to coordinate the expertise of specialists, not just through courses but using social learning in the form of Wikis, discussion boards and communities of practice.

The lessons learned were presented to NZDC Command last month and our Post Activity Report is available through the NZDC SharePoint.



*Martin* df

Martin Boulton  
Team Leader  
Training Technology



This year I was able to combine the IITSEC conference with a brief visit to Washington D.C. to visit several US DoD and US Govt organisations who are part of the Advanced Distributed Learning (ADL) partnership. NZDC Principal Learning Advisor Ms Jenny Houston (who is currently based in D.C.) and I met with training and education leaders from the USMC University, US Joint Services Mod Sim Centre, Pentagon Joint Staff J7, the National Parks Service and the Jefferson Institute.

Each visit revealed the common challenges large organisations are experiencing in maintaining learning currency in the face of the relentless onslaught of tech. In a way it was reassuring to have an organisation such as the



Recently I embarked on an exciting video project requiring a documentary covering the various aspects of the 6-week Joint Officer Induction Course (JOIC). Officer Cadets from all three Services come together at RNZAF Base Woodbourne to learn the fundamental skills to prepare them for their respective single service officer training. I have just finished filming the first course for 2018 and will also be covering the second course to get pick-up shots starting in July.

The finished product will be a 5 - 10 minute passive video used to inform cadets of what they will undertake during the course and alleviate any fears or common misconceptions they may have leading up to the course. The video will be shown to all Cadets and Midshipmen at their induction day and will feature interviews with the trainees as well as the instructors from the JOIC course.

**The video is due to be released by the end of 2018.**

*Aaron* df

Aaron Falvey, TVP

As a Training Visuals Producer it is not often that a project provides the opportunity to have a creative narrative for a story that sits within a training context. I've captured some exciting footage thus far, covering training exercises with the cadets riding in the Navy's Rigid-Hulled Inflatable Boats (RHIBs) out in the picturesque Marlborough Sounds and flying in the Air Force's NH90 Helicopters in the Rainbow Valley.







# 3D PRINTING

A learning aid is an object used to enhance learning and retention by the learner. Learning aids are effective because they encourage learners to become actively engaged in their learning. An expression we often use to capture that paradigm is,

**I hear, I forget.  
I see, I remember.  
I do, I understand.**

Learning aids are a fundamental resource in any classroom. Benefits include helping demonstrate a concept, tailoring instruction and relieving anxiety or monotony by delivering information in a new and exciting way.

Not only do learning aids allow students more time to practice, but they also present the information to students in a different way to actively engage with the material.

We wanted to hear from our SMEs and Instructors, regarding how learning aids are deployed and what difference they make during instruction in the classroom or through OJL.

## Navy Electronic Warfare

“During the redesign of the Petty Officer Electronic Warfare Specialist (EWS) course, a desired outcome was to grow LEWS personnel from experts on unit Anti-Ship Missile Defence (ASMD) to subject matter experts (SME) on the defence of a maritime task group against anti-ship missiles. The skills we were looking to develop were critical thinking, problem solving and situational awareness so that they were able to develop and advise command on tactics the defend against anti-ship missile threats.

“Simple plastic models representing key task group elements as well as threats were identified as being beneficial to assist learners with developing their mental models of the tactical environment. To teach critical thinking and problem solving, as well as assisting learners with the application of tactics; instructors will pose a tactical problem to the class and as a team they solve the problem.

“The use of models means that different solutions for the same problem can be explored and then compared, with the best solution being selected.”

**Lt Murray Brown CAPBr LA**

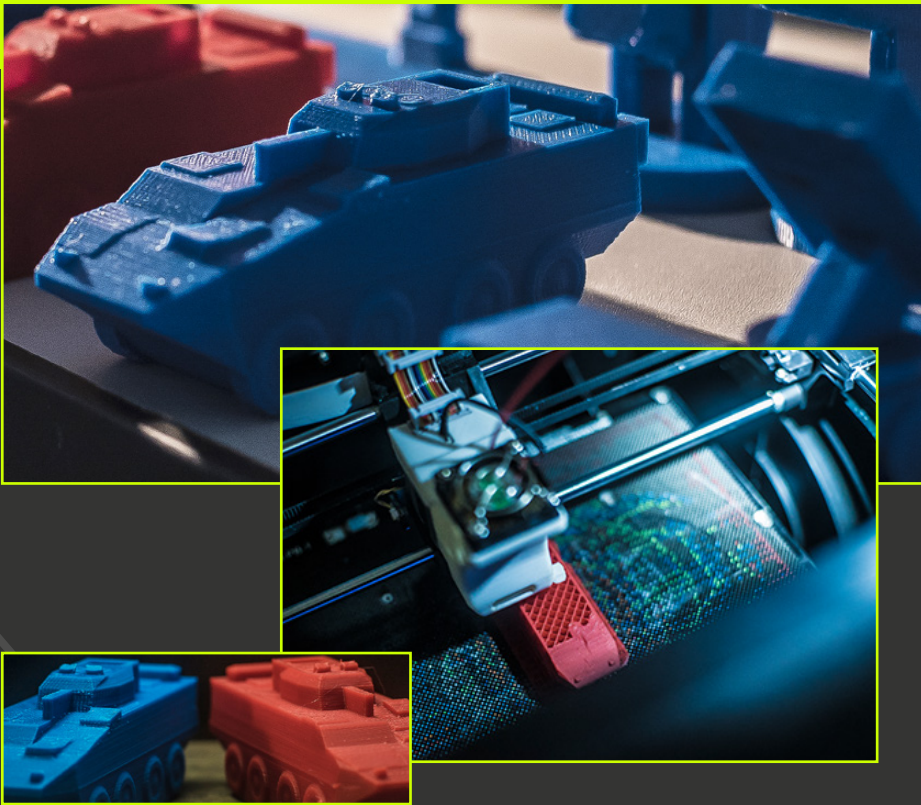
## Army Warfare and Tactics

“Historically the Officer Cadet School (NZ) in Waikourou has used a lot of PowerPoint lessons, group discussion and doctrine tests to deliver training, we would use substitute items or laminated tactical symbols, which is great to an extent but not always ideal.

“The LAV (models) have been printed to support the delivery of orders and tactics instruction at OCS. By using model vehicle training aids, it helps the student visualise what these tactics actually ‘look like’ on the ground, i.e. how much space does a company of LAV actually take up on the ground in their assembly area.

“The students must understand what assets and capabilities they have, including type and number of vehicles. In order to conduct a robust enemy assessment, they must also understand the strengths and limitations of the enemy’s vehicles, its capabilities and how the enemy employs them in the attack, defence and withdrawal according to doctrine.”

**Capt Oliver Lynn NZ Army OCS**



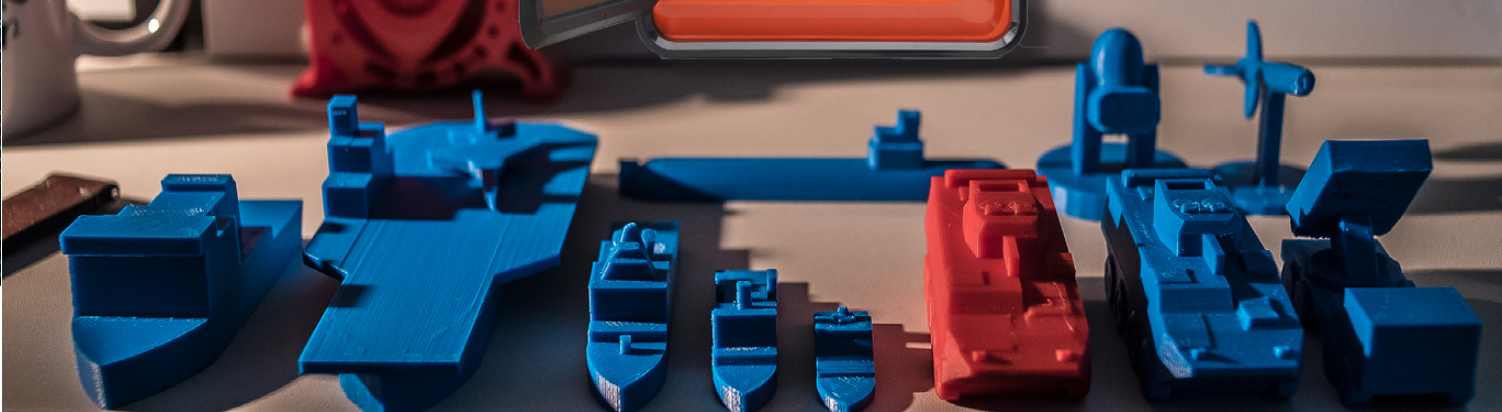
Learning aids are important tools for face to face instruction. They help the instructor present a lesson effectively and help trainees learn and retain information.

TT has the capability to design and produce 3D printed learning aids within a rapid turnaround time. We offer easily identifiable, low fidelity and scaled representations of real objects. These are not replicas, but representations for effective learning.

The low actual costs for 3D printing materials makes it another good reason to include a 3D printed learning aid as part of your learning resource.

If you are interested in exploring 3D learning aids as part of your instructional approach get in touch with the TT team through the LTK or NZDC website.

*Evan*   
Evan Floyd, DTMP





# DEVLEARN 2017

Last October I travelled to the eLearning Guild annual conference Devlearn 2017, one of the largest held internationally. This year around 3300 delegates attended of which myself and Team Leader Martin Boulton represented the NZDF. With over 200 learning sessions, two of us travelled to ensure a wider range of activities could be covered. With Martin present I was able to attend technical workshops and case study sessions directly related to e-learning development and delivery.

Martin attended the inaugural Executive Forum connecting senior learning and development leaders to discuss the impact of emerging technologies and the impact on learning. This is an ongoing initiative of which TT, through our TL, is able to participate in and in turn contribute to the eLearning Guild.

I attended a pre-conference workshop titled 'Building Easy and Effective Augmented Reality in Your Training'. While focused on augmented reality one of the key takeaways for me was thinking about ways to reach learners outside the traditional classroom. Using a smartphone learners could interact with posters on a wall, brochures, signs etc. It was very exciting to think about all the ways this technology could be used to expand on current practices within NZDF learning.

One notable change from previous years was in the area of Experience API (learning data and analytics). People are no longer discussing the potential of xAPI, now they are discussing how they are implementing xAPI and the impact on their learners. Use of learning data to improve training outcomes has truly arrived, with



50% of delegates indicating some level of transition into using xAPI. It was refreshing to see the shift in focus with examples of xAPI use in learning systems.

I attended several case studies around the use of 360 video and now that the TT unit has this capability I can't wait to start investigating how we can produce and deliver some innovative learning aids for use in NZDF schools and units.



James  
James Mitchell, DTMP



On February 15 and 16, I attended the inaugural Scholarship of Technology Enhanced Learning symposium (SoTEL) in Auckland. A key theme for SoTEL 2018 was **what does the future of learning look like and how do we prepare for that?** The labour market is increasingly demanding higher order skills: PWC report Workforce of the Future 2030<sup>1</sup> cites problem-solving, adaptability, collaboration, leadership, creativity and innovation as the top skills employers are looking for when recruiting new personnel. For students, the learning proposition is about acquiring skills and learning how to learn, rather than acquiring knowledge.

Universities are responding to this by challenging their own organisational model and moving away from teaching 'knowledge'. They are beginning to combine faculties to create new programmes of study which set real world, authentic problems and develop skillsets to deal with those problems. They understand that students learn through discussion, sharing and exploring ideas in social ways and connecting with each other and a broader community through shared physical and virtual spaces.

The tertiary sector is beginning to seriously reconsider its use of student spaces with a focus on how environments can be reconfigured to encourage informal and social

learning opportunities. This got me thinking about how our organisation can learn from this and follow suit to remain current and relevant in the training and education space.

As learning providers, every change we make starts with our own practice, so I thought I'd leave you with these questions; the next time you are designing, developing or delivering learning, ask yourself

- **How can I create a context for this piece of learning which is based on real world scenarios?**
- **How can I spend less time directing learning and more time supporting learners to lead their own learning?**
- **How can I create an opportunity for learners to collaborate and learn from each other?**
- **How can I reconfigure my classroom or learning environment to encourage social learning and collaboration?**



Philippa  
Philippa Harvison, ELS





# Amphibious Operations

As part of a review of our current live (LMS) courses the Amphibious Operations (AO) Prerequisite was selected as a likely candidate for a digital refresh.

It had been a number of years since the development of AO version one which adopted an 'everything and the kitchen sink' approach to amphibious operations. In short, it was a big course with a ton of content that, arguably, was not all relevant within the context of its prerequisite status.

Lieutenant Commander Cuong Huynh from Capability Branch had become POC/SME with regards to Amphibious Operations and upon receiving my email outlining a possible refresh he jumped at the chance to be involved. We completed a PID (Project Initiation Document) requesting that the course be refreshed and the project began. From the outset Lt Cdr Huynh proved to be an effective SME. His depth of knowledge and availability instilled confidence that he would keep the project moving forward.

At our first meeting the original AO course was evaluated and a decision was made to thin the content of version one right down and provide a more streamlined, relevant version two.

Initial concepts were developed that took the course in a new visual direction. Lt Cdr Huynh focused on the AO acronym PERMSAT which stands for Planning, Embarkation, Rehearsal, Movement, Shaping, Action and Termination, all essential elements of a successful amphibious operation. PERMSAT formed the main content of version two.

Lt Cdr Huynh gave me a scenario that he had used in a recent presentation. We explored the idea of a strong narrative to underpin version two allowing the learner to feel more engaged and form associations with the content and to aid retention. Analysis of the Navy's Divisional Management Course (DMC) prereq' suggested learners connected well with stories that were authentic and relevant. 'Trouble in Paradise' became the 'hook' from which learners were drawn into the AO story and key concepts were introduced as the story progressed.

Working in Adobe Photoshop, development began on initial concepts exploring the 'big three'; layout, colour and typographic styling. The layout for the course was long form slides which had also been used with great success on the DMC. Long form slides generate more space to work with and allow for much more exploration around the narrative. Feedback from both client and learners suggested they



liked the format as it reminded them of magazines or newspapers.

The colour scheme of AO version one had been based around tones of yellow so this was a good opportunity for an update and, after a few colour tests, we focused on dark grey and purples for version two. Finally the focus turned to typography. Open Sans was selected as it is effective as a display font and very readable at smaller sizes. Trifecta complete.

Two sample slides were created which gave a clear indication of the visual approach AO would take. These were sent off to Lt Cdr Huynh for review. His feedback was positive with the only suggestion being a change from grey and purple to tones of purple. An easy change to make which enhanced the overall look and feel of the project. With changes made we moved forward.

As this was a pre-requisite course there wasn't going to be an online test at the end. Lt Cdr Huynh suggested it would become clear with learners in subsequent face to face sessions if they had grasped key concepts that had been introduced.



Examples of long form slides created for the Amphibious Operations course version two.

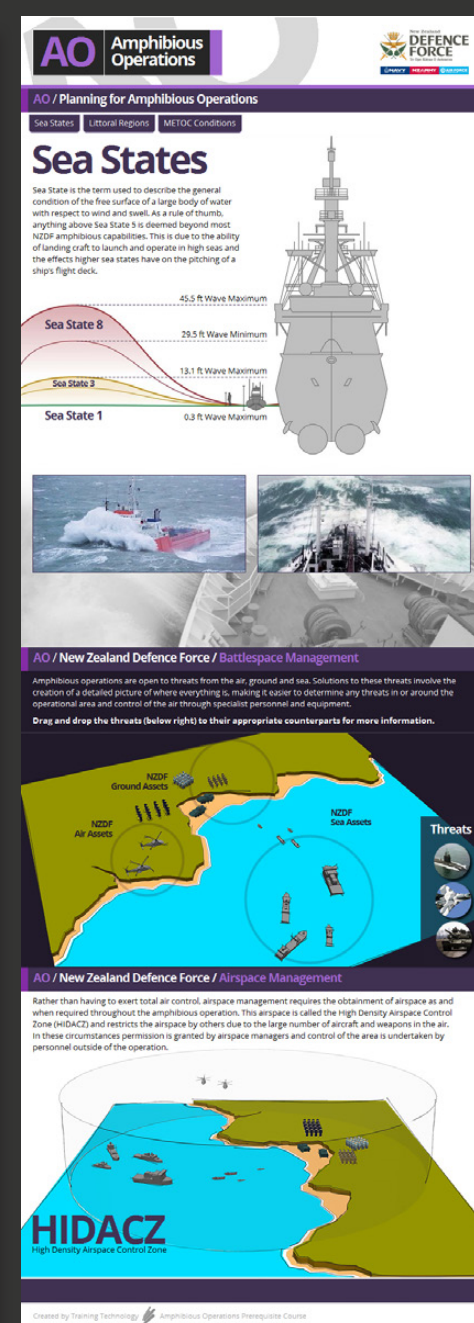
On completion a target group was asked to review the course and provide feedback. These comments positively reflected the changes made. Version two of the AO course will go live on the LMS within the next few weeks.

*Frazer*  
Frazer Gregory, DTMP



"The new LMS package is easier to understand and the layout more straight forward".

"The graphics used are better and relatable".



"The overview of the course is good for describing the concepts of Amphibious Operations, and covers the basics well".



DUSS stands for Diver Underwater Sonar System. It is a hand held underwater computer which processes information from various attachments and gives a diver accurate target locations in a real time display. DUSS is unique because it has multiple accessories that can be attached underwater while it's still running.

DUSS is used by the operational dive team and trainee divers. The Training Technology (TT) team was asked to develop a learning aid for DUSS so that a trainee has access to the e-learning anytime, can learn at their own pace and also to assist the instructor with their classroom delivery. Project SME Leading Diver Te Mana Tohiariki provided some feedback about the development of the DUSS learning aid and also working with the TT team.

Tell us a bit about yourself and how you got assigned to the DUSS project?

"I got involved with the DUSS project when I first posted to the Dive School from HMNZS Te Kaha mid last year. LDR Shea posted out of the school and I was given the opportunity to help finish the project that he was working on.

What are your thoughts about the DUSS Phase 1 learning aid?

"I think the Phase 1 learning aid will definitely give students a bit more of an insight in to different search techniques within the CDG and by having it online as a learning tool students are able to learn at their own pace prior to a formal induction on their Able Diver Warfare Course.



ADR Strickland with the DUSS System

What are the benefits of this e-learning course for the divers?

"I think the biggest benefit of this e-learning course will be that all students will now be taught the same things regardless of the instructor. There's now a solid template that covers all the basics that might sometimes be overlooked. Video footage and small quizzes also help to paint a better picture of what the software actually looks like so it can speed up the process during the formal induction to the practical side of DUSS diving.

Can you describe your experience working with the Training Technology team on this project?

"My experience with the Training technology team has been smooth. Very easy to get a hold of if I had any questions or thoughts on how to add and change things, and good use of resources.

Any final thoughts or comments?

"I'm definitely looking forward to completing the Phase 1 learning aid and hopefully be involved in the Phase 2 learning aid which should also be a great help to not only future students but Operational Dive Team boys as well who might need a little refresher before work ups etc."



Akhil Warriar, DTMP



Considering using E-learning? Not sure of your options?

E-learning techniques and tools like the ones outlined below can be developed to support Face to Face instruction to achieve a blended learning solution.

1 Pre Course

- Diagnostic Assessment
- Pre course questions (enquiry, recall, retrieval)
- Familiarisation material
- Talking heads video
- Animated messages
- Curated content
- Documentary style video
- Instructional video

2 During Course

- Full courses
- Learning aids
- Scenarios
- Branching scenarios (with/without video)
- 3D models/animations
- Blended learning
- Instructional video
- 360 degree photography
- Interactive spaces

3 Post Course

- Follow up learning
- Follow up assessment
- Memory boosts
- Re-quals
- Video



For more information about Training Technology or to watch our profile video please visit:

- ▶ NZDC - Training Technology
- ▶ Email Training Technology



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