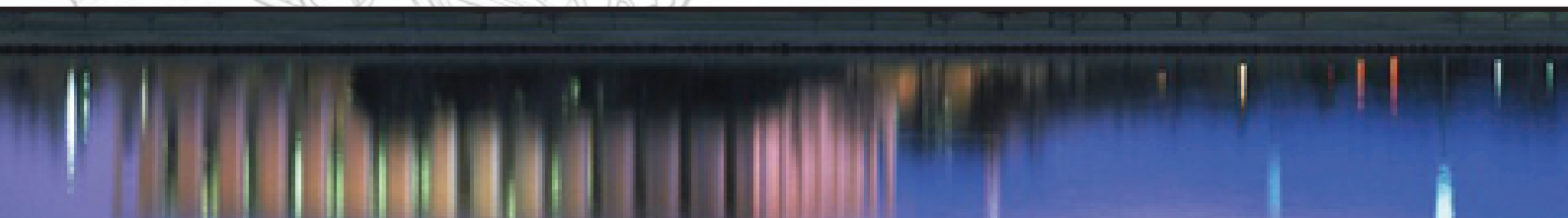




# The Power of Maps 2015 Conference Program

Wednesday 29th April - Friday 1st May

National Library of Australia, Canberra





The conference is jointly organised by the Australian and New Zealand Map Society and the Mapping Sciences Institute, Australia

The organising committee extends a warm welcome to all delegates at the Power of Maps conference

We thank the National Library of Australia for making this conference space available



We are grateful to our keynote speakers:



Dr. Chris PIGRAM  
CEO, Geoscience Australia



Professor Georg GARTNER  
President, International Cartographic Association



Mr. KHIN Maung Maung  
Managing Director, Geocomp International

and wish to thank all speakers for their contribution to the programme

In acknowledgement of the 100 year anniversary of the ANZAC Corps and the 100 year anniversary of the formation of the Royal Australian Survey Corps, sessions 2 & 6 have been dedicated to military mapping

# Conference Program

Tuesday, 28 <sup>th</sup> April 2015		
	8:30am to 3:00pm	SSSI Cartography and Map Design Workshop (Venue: Training room 3-4, Level 4, NLA)
	9:00am to 3:00pm	MSIA Council meeting (Venue: Meeting Room 1, Level 4, NLA)
	4:00pm to 5:00pm	MSIA Annual General Meeting (Venue: Meeting Room 1, Level 4, NLA)
	4:00pm to 5:00pm	ANZMapS Annual General Meeting (Venue: Training Room 3-4, NLA)
	6:00pm to 7:30pm	Informal welcome drinks, National Library of Australia (Venue: Brindabella Room, Level 4)
	6:00pm to 7:00pm	Conference Registration available
Wednesday, 29 <sup>th</sup> April 2015		
	8:00am to 9:00am	Conference Registration Level 4
Session 1	9:00am to 9:10am	Welcome to Country and Welcome by Mrs Anne-Marie Schwirtlich, Director-General of the National Library of Australia
	9:10am to 10:00am	<b>Keynote address: Dr Chris PIGRAM, CEO Geoscience Australia</b>
	10:00am to 10:25am	The Royal Australian Survey Corps 1915-96
	10:25am	Morning Tea
Session 2	11:00am to 11:25am	Military Mapping of Australia, 1907-15
	11:25am to 11:50am	Maps and Mapmakers of the Official History 1914-18
	11:50am to 12:15am	Mapping for the War in the South West Pacific 1942-45
	12:15pm to 12:40pm	National Mapping's Aerodist Surveys in Western Australia 1971-74
	12:40pm	Lunch
Session 3	1:30pm to 2:20pm	<b>Keynote address: Professor Georg GARTNER, President, International Cartographic Association</b>
	2:20pm to 2:45pm	New Zealand Lands and Survey maps digitisation project case study
	2:45pm to 3:10pm	Preserving History. Digitisation of Allied Geographical Section. South-West Pacific Area, Terrain Study collection
	3:10pm	Afternoon Tea
Session 4	3:35pm to 4:00pm	Recent Trends in the Mapping Sciences
	4:00pm to 4:25pm	More than Where – Advancements in Mapping Technology
	4:25pm to 4:50pm	European Union Joint master degree for Cartography Master of Science

Thursday, 30th April 2003		
	8:15am to 9:00am	Conference Registration Level 4
Session 5	9:00am to 9:10am	Welcome
	9:10am to 10:00am	<b>Keynote address: Mr KHIN Maung Maung, Geocomp International and Mr Kent LEE, President &amp; CEO, Eastview Geospatial</b>
	10:00am to 10:25am	From Plane Table to Satellites: The changing role of Technology in Military Mapping over 100 years
	10:25am	Morning Tea
Session 6	11:00am to 11:25am	Survey And Mapping The Anzac Sector On The Gallipoli Peninsula 1915
	11:25am to 11:50am	Far from the Dardanelles': reading the fighting in Australian newspapers and commercial maps.
	11:50am to 12:15am	Anzac Panorama' – a survivor's tribute to the Anzacs, August 1915
	12:15pm to 12:40pm	The Role of the Australian Army (RA Svy Corps) in the Mapping of Papua New Guinea
	12:40pm	Lunch
Session 7	1:30pm to 1:55pm	A strategy of disinformation: How and why Captain Cook concealed his discovery of Bass Strait from Britain's rivals.
	1:55pm to 2:20pm	Identifying the Origins of Major Mitchell's Quotations, References and Footnotes in his "Three Expeditions"
	2:20pm to 2:45pm	Digitising the past – a return to Ludwig Leichhardt's Overland Expedition of 1844-45
	2:45pm to 3:10pm	Papua New Guinea: The North West Patrol Remapped
	3:10pm	Afternoon Tea
Session 8	3:35pm to 4:00pm	Retrieving the Cultural Biography of a Gun (or) Mapping the Surface of a Gun.
	4:00pm to 4:25pm	User Experiences of the 1ATF in Vietnam Webmap
	4:25pm to 4:50pm	Introduction to History Strategy Games
	4:50pm to 5:15pm	Map-making for History Strategy Games
	6:30pm for 7:00pm	Conference Dinner Canberra Institute of Technology Function Centre Constitution Ave, Reid

## Conference Tour Itinerary

Friday, 1 <sup>st</sup> May 2015		
	8:45am	Meet at National Library at 8:45am ready for 9:00am departure
	9:00am to 9:30am	<i>Travel to Geoscience Australia</i>
	9:30am to 10:30am	Geoscience Australia
	10:50am to 12:00pm	Australian National University <i>Tour to incorporate augmented reality technology and view William Smith's Geological map of England, "The Map that Changed the World"</i>
	12:00pm to 1:30pm	<i>Lunch* at National Arboretum (includes travel time)</i>
	2:00pm to 3:00pm	Australian War Memorial <i>Tour of refurbished dioramas by curator of art, Laura Webster</i>
	3:30pm to 4:00pm	Red Hill Lookout
	4:10pm to 4:30pm	Surveyor's Hut
	4:30pm to 4:45pm	<i>Travel return to National Library Australia</i>

\*Lunch and teas are provided

Commentary en-route of sights and Canberra layout

## Conference Exhibition

### Barbara Petchenik Children's World Map Competition 2015

The Barbara Petchenik Children Map Drawing competition is organized every two years by the International Cartographic Association. MSIA is pleased to be able to display the Australian entries here at the Power of Maps conference for all to enjoy. The maps judged as the national winners for the age categories will then go on to represent Australia at the International exhibition at the 27<sup>th</sup> International Cartographic Conference being held in Rio De Janerio, Brazil. A people choice award will also be offered here at the conference, all delegates are eligible, to enter, please remember to submit your entry by the end of day one.

Results published at

<http://mappingsciences.org.au/barbara-petchenik-childrens-map-competition-2015/>

MSIA would like to sincerely thank the NSW Lands Department for donating the prizes for the Australian competition.

# PRESENTATION ABSTRACTS

Wednesday 29<sup>th</sup> April

## SESSION 1

### Keynote: Are We There Yet? The Power Of Mapping In The 21st Century

**Dr Chris Pigram**

CEO, Geoscience Australia

Knowing what is happening where has long been an important part of government, industry and community decision-making – from locating where disaster assistance is best given, to where the next big oil field will be, providing certainty over land ownership, to delivering services, down to calculating the most scenic route for a holiday. The power of maps and location information has grown as a result of high-profile changes in technology, increasing exposure to changes in the environment, and how global society interacts.

This keynote presentation will examine the disruptive factors that have changed, and will change, the face of mapping in Australia. The role of “the map”, location information and geospatial technology in the 21<sup>st</sup> century will be considered as part of these changes. The presentation will also examine the impact of these changes on the evolution of mapping agencies to geospatial information authorities, and the implications of this transformation on “the map” itself, using examples from Geoscience Australia’s work in the Foundation Spatial Data Framework, the Data Cube, and the visualisation of location information for decision making.

### The Royal Australian Survey Corps 1915-96

**Lieutenant-Colonel Peter Jensen**

Lieutenant-Colonel Peter Jensen, B App Sc (Surveying and Mapping) WAIT, M Sc (Geodetic Science) Ohio State University

The Australian Survey Corps was founded 100 years ago on 1st July 1915 with nineteen members of the Permanent Military Force, just nine weeks after the Australian and New Zealand Army Corps landed on the Gallipoli Peninsula. But the Survey Corps was not born to provide military survey for that campaign or for later campaigns of the First World War. At that time the Corps continued the high priority work of its predecessor organisations – the Australian Intelligence Corps and the Royal Australian Engineers - working on the military survey for the defence of the major cities and ports of Australia. Most of the Corps members later served on active service with the 1st Australian Imperial Force in survey roles. After the war the Corps continued its military mapping program in Australia at much the same pre-war rate until the Second World War when it grew to about 1700 people serving in all of the theatres of war in which the Army was fighting. For 51 years after that war, the Corps provided military surveys, maps and charts for: combat operations, peace-keeping, international defence cooperation programs, Defence installations and military training areas; and worked collaboratively with allied nation, federal and state agencies on many survey and mapping programs. In 1993-1995 Army reorganised strategic functions of the Corps and in 1996 the remaining Army survey combat support role of the Royal Australian Survey Corps was re-integrated with the Royal Australian Engineers.

## SESSION 2

### Military Mapping of Australia, 1907-15

#### Denis Shephard

Denis Shephard volunteers in the National Library of Australia's map room and was a member of the curatorial team that developed the Library's Keepsakes - Australia and the Great War exhibition with particular responsibility for the mapping component

The Defence Act of 1903 provided for the defence forces to carry out military survey and mapping work. Prior to the establishment of the Australian Survey Corps (Royal Australian Survey Corps from 1948) in July 1915 responsibility for the production of military maps rested with the Australian Intelligence Corps (AIC), formed December 1907, and, from 1910, the newly established Survey Corps, Royal Australian Engineers, which carried out surveying work under direction from the AIC. Several maps produced at this time survive in the collections of the National Library of Australia, the state libraries of Victoria and New South Wales and probably elsewhere (research still under way). This paper will examine the production of military maps prior to 1915 through the work of a number of individuals and the maps they produced, including Lieutenant-Colonel John Monash, Captain George Augustine Taylor and one or two others to be selected as research continues. Emphasis will be on New South Wales and Victoria although reference will, of necessity, be made to other states. Maps to be highlighted include 'Reconnaissance map of the district east of Glen Innes' (1912), 'Rough topographical map of part of Federal Capital Territory for military purposes' (1913) and 'Map of manoeuvre area, Kilmore-Broadford district' (1914).

### Maps and Mapmakers of the Official History 1914-18

#### Granville Allen Mawer

Allen Mawer is an independent historian who has written extensively on maritime, polar and colonial history. His most recent book is *Incognita: The invention and discovery of Terra Australis*

Charles Bean's war history was like no other and so were its maps. A scratch contingent of AIF topographers, draughtsmen and engineers, with a sole surveyor, sowed the principal volumes with hundreds of maps and sketch maps, more than had appeared in any previous Australian publication. In some places there was one on every second page. They were recording a people's war for the people from whose ranks the mass of combatants had been drawn so the maps were as simple and self-explanatory as possible. The most successful were those on the same intimate scale as Bean's text. The same approach was adopted for the WWII official history but that was the last of Australia's mass wars. Subsequently, official war history mapping was increasingly distant and technical.

### Mapping for the War in the South West Pacific 1942-45

#### Dr Trevor Menzies

Trevor Menzies has held appointments as NT Surveyor-General and Adjunct Associate Professor NT University. He is a Past President of ISA and MSIA

Japanese forces landed on the north coast of the Australian Territory of Papua in July 1942 and advanced along the Kokoda Track towards Port Moresby. Troops were sent in to defend the area but had no maps suitable for combat purposes. Units of the Australian Survey Corps responded by producing maps over enemy held territory but under dangerous and difficult conditions. Following the long offensive to neutralize the Japanese forces in New Guinea by mid-1944, units of the Survey Corps were sent further afield to the Netherlands East Indies, New Britain and Bougainville to undertake mapping for the final campaigns of the war. On the occasion of the centenary of the formation of the Australian (later Royal Australian) Survey Corps this paper outlines the mapping and associated activities undertaken for the campaigns in the South West Pacific Theatre during the Second World War.



## National Mapping's Aerodist Surveys in Western Australia 1971-74

**Dr John Manning & Laurie McLean**

Dr John Manning LS PhD MEnvSc MBA - Aerodist party leader Western Australia in 1971

Laurie McLean BEc - technical assistant with Aerodist operations during 1971-74

Topographic mapping coverage of Australia's landmass always presented a huge cartographic challenge for a sparsely populated nation. In 1945, a National Mapping Council was formed to coordinate activity between mapping authorities. In 1947, to facilitate this approach, a dedicated National Mapping Section was created within the then Commonwealth Department of the Interior. This heightened mapping activity then took place before the Global Positioning System, satellite imagery or even computers were available. A major step was use of block aerial photography coverage flown by Royal Australian Air Force in the 1950s for the R502 series 1:250,000 scale planimetric map coverage where horizontal control was provided by isolated astro fixes in sheet corners. Later technology advances enabled the huge mapping task to be progressed later that decade; namely the Tellurometer introduced in 1957 and the Wild RC9 super wide angle aerial survey camera deployed in 1960. With the later availability of 1:80,000 scale aerial photography and stereo plotting machines great progress was made. However, photogrammetric mapping required many more ground positions to be identified on the photography. Horizontal control was achieved by the use of the airborne Tellurometer (Aerodist) system. Aerodist was a brilliant but difficult system; it was little used elsewhere in the world. Between 1971 and 1974 Nat Map's Aerodist measuring field party operated mainly in Western Australia. The party used previously marked horizontal ground control points; nominally at every degree of latitude and longitude to establish horizontal ground positions for photogrammetric compilation of the 1:100,000 scale National Topographic Series. This paper addresses some of the pain, sweat and tears of that remarkable field work particularly in the western deserts.

## SESSION 3

**Keynote : Modern Cartography and the Role of the International Cartographic Association (ICA)**

**Professor Georg Gartner**

President, International Cartographic Association, Vienna University of Technology, Austria

In this presentation it is argued, that cartography as discipline is probably more than ever affected and advanced by technological innovations and developments. New possibilities in acquisition of spatial data, their processing and modelling and finally their distribution are available. In the context of new technologies there is an increasing number of cartographic applications available and in development. Web Mapping, Internet Cartography, Maps on mobile phones and Spatial Data Infrastructures using Map Viewers are just a few examples on how established modern cartography is. The big trends of Cartographic Developments in the context of Spatial Data Infrastructure, Automated Data Acquisition, Volunteered Geoinformation, 3D Modelling and others are discussed and the meaning, challenges and chances of these developments.

In this context the role of the International Cartographic Association (ICA) is crucial. ICA offers a number of instruments for promoting the importance of maps and cartography. In this presentation the main activities and possibilities to get involved will be discussed.

<b>New Zealand Lands and Survey maps digitisation project case study</b>	
<b>Mark Bagnall &amp; Andrew Robinson</b>	
<p>Mark Bagnall has worked in specialist New Zealand and Pacific Islands research libraries since 1994, appointed to Curator, Cartographic at the Alexander Turnbull Library in July 2013.</p> <p>Andrew Robinson is a senior cataloguer at National Library of New Zealand where he has been a serials cataloguer since 2005 and part-time map cataloguer since 2009</p>	
	<p>At the National Library of New Zealand, one of the most important and requested New Zealand Mapping Service series is NZMS 16 Cadastral town maps. The various editions of the NZMS 16 maps depict developments and layouts of early townships across New Zealand and the series' own history provides some insight into the developments of surveying and cartography in NZ. This series was one of the first to be digitized as part of the joint University of Auckland, LINZ and National Library of NZ digitization project. In this presentation, we take a brief look at some characteristics of this map series – both historical and physical characteristics - and how we took them into consideration when uploading to the National Library's National Digital Heritage Archive, and in describing, and providing access to the series.</p>
<b>Preserving History. Digitisation of Allied Geographical Section. South-West Pacific Area, Terrain Study collection</b>	
<b>Bronwyn Foott &amp; Barbara Wojtkowski</b>	
<p>Bronwyn Foott - Repository Content Officer, Monash University Research Repository, Monash University Library</p> <p>Barbara Wojtkowski - Reference and Maps Librarian, Hargrave-Andrew Library, Monash University Library</p>	
	<p>In 1942, after a series of directives from General MacArthur's Headquarters, the Allied Geographical Section (AGS) was formed with the task of compiling all the available geographical intelligence on the largely unmapped and underexplored south-west Pacific area (SWPA). During its lifespan (1942-45), the AGS, produced 3 major types of publications: <i>Terrain Studies</i>; <i>Special Reports</i>; and <i>Terrain Handbooks</i>. The <i>Terrain Studies</i> were the most important and complex works, designed to give the most comprehensive information. Thus, they contained text, diagrams, photographs and various sized and coloured maps. In 2013, Monash University Library initiated a project to digitise its substantial collection of <i>Terrain Studies</i> and make them available via the "Monash University Research Repository" to complement its online collections for the ANZAC Centenary. The paper will explore a number of aspects of the project: its genesis; challenges, given the format of the material; the scanning process; metadata creation and changing geography (role of gazetteers); how it complements existing WWI exhibits; and methods of access.</p>

## SESSION 4

### Recent Trends in the Mapping Sciences

#### Dr. David Fraser

Dr. David Fraser was a lecturer at the RMIT University for 28 years, retiring as an Associate Professor. He is a national councillor of the Mapping Sciences Institute, Australia

Each month eCARTO is published electronically for the International Cartographic Society. The eCARTO newsletter captures the latest cartographic and GIScience news and developments from around the world. The final publication is a structured grouping of links to websites which outline key activities and events for that month. For the last few years trends have developed in cartographic research and development and the web-links presented reflect the trends. Examples are: the development of UAV's; 3D printing; indoor navigation; data clouds; increased on-line interactivity and more. This paper will outline many of the developments identified throughout recent years and will forecast the directions that cartography and related disciplines may take in the future.

### More than Where – Advancements in Mapping Technology

#### Laura Berman

Partner Manager, ESRI Australia

Each year new words are added to the Macquarie Dictionary, providing important insights into global trends. The recent inclusion of the word 'infovore' – a person who craves information, especially one who takes advantage of their ready access to it on digital devices – underlines the fact that technology is changing the way we operate. This growing thirst for readily accessible information is also a pattern shaping developments in the spatial industry. The transformation from paper to digital maps is now the benchmark, as tech-savvy consumers better understand the context of location. As the industry embarks on this new standard, we enter a world where the context of analysis and mapping has shifted. In this presentation, Laura will discuss the role of modern mapping technologies and provide real world examples projects undertaken in the areas of conservation, land management, crisis coordination, and global health epidemics.

## European Union Joint master degree for Cartography Master of Science

**Professor Georg Gartner**

President, International Cartographic Association & Vienna University of Technology, Austria

The E+ JMD CARTOGRAPHY Master of Science aims to provide qualifications for entry into the professions in the area of cartography research, map publishing, Internet mapping, geographic information systems (GIS). Over 4 semesters (120 ECTS), the students attend four universities. The first semester occurs at TU München in Germany. The second semester takes place at TU Wien in Austria. During the third semester students will study at TU Dresden in Germany. The fourth semester will take place at the University of Twente in The Netherlands where students will prepare their Master's thesis. All the courses will be taught in English. The partner universities jointly contribute with teaching modules that are reasonably integrated into a consecutive curriculum. The curriculum incorporates and highlights the methods and applications in spatial data modelling, analysis and in particular visualization of geographic information. An introduction to German and Dutch culture and language will be given to the students. The programme has an intake between 15 and 20 students per year. Between the second and third semester students can additionally choose to attend an internship, offered by associated programme partners (eminent European companies or research institutions). Students are supposed to be trained for taking part in research projects and aim for continuation of their studies for the PHD degree. A Joint Degree will be awarded by TU München, TU Wien and TU Dresden and the involvement of the University of Twente is reflected through a Diploma Supplement. Highlights of the programme are well reputable scientists contributing with guest lectures, attractive excursions to research institutions and eminent cartographic companies and an introduction seminar held in the Bavarian Alps at the beginning of the programme. As the only truly international Master of Science in "Cartography" in Europe and a very high concentration of scientific competence in cartography this innovative programme holds unique features not only in Europe, but also worldwide and provides excellent job opportunities. This Master programme set innovative standards in the international cartography education and research and was recently awarded the most prestigious European Union Grant for Master Programmes.

Thursday 30<sup>th</sup> April

## SESSION 5

### Keynote: Myanmar 1:50,000 National Mapping Project

#### Mr Maung Maung Khin & Mr Kent Lee

President / CEO, Eastview Geospatial , Minneapolis, USA  
& GeoComp International, Melbourne

Myanmar (Burma) is a sovereign state in Southeast Asia bordered by Bangladesh, India, China, Laos and Thailand, with a total area of 676,578 square kilometres. Topographic maps of Myanmar were produced by Survey of India in the early 1900s with the most recent revisions in the 1940s. The map projection system was Lambert Conformal Conic Projection and Vertical Datum was based in Everest Ellipsoid. The map scales were generally 1 Inch to 1 Mile (1:63360) and 1 Inch to 4 Mile. Survey of India completed the Trig Survey for all of Myanmar and also connected to Thailand and Indochina before World War II. A number of first order Trig Stations were established in Myanmar, according to the Survey of India records. A first order levelling network was undertaken along the major roads and rivers such as Ayeyawady and Chindwin.

About 20 years ago the need to update the national mapping became a major issue in Myanmar. The Survey Department is responsible for topographic mapping and at the time had a limited capability, including an old Wild aerial camera and dated analogue photogrammetry equipment; principally A6s and B8s.

The Myanmar Survey Department wished to renovate the National Mapping Datum and change the map projection system to World Geodetic System 1984 (WGS-84). All the neighbouring countries had changed their map projection from Lambert System to WGS-84 with all new maps created in the metric system. Through the 1990s the Survey Department made enquiries and sought assistance to remap Myanmar. Due to a lack of funding and a feasible implementation plan, the project was delayed for many years. Due to the political sanctions and embargos, many international institutions and companies did not wish to provide funding and support to the Myanmar Government.

As a Geologist I had used many of the topographic maps of Myanmar and had seen many errors, discrepancies and feature changes on the ground. In 1999 I received a request to review the possibility and process to undertake the new National Mapping of Myanmar. Such a project cannot be done without the acquisition of new aerial photography, datum renovation, stereo digitising, map compilation, cartography, field verification, map editing and map publishing.

In early 2000, with assistance from international mapping industry contacts, I completed my assessment and report on the New Myanmar Mapping. The proposal was succinct and developed in accordance with the Myanmar Survey Department wish list. Most importantly, the project budget was affordable to the Myanmar Government, the approval of which was granted.

The official signing of the agreement for the Myanmar 1:50000 National Mapping project took place in Yangon in August 2000. The project was planned for completion within 7 years, which included one year for a pilot project to produce 16 map sheets. This was intended to demonstrate to the Survey Department the work flow and methodology of the digital mapping techniques.

An analogue camera, equipped with an inertial measurement unit (IMU) and flight management system with airborne GPS and ground base stations was used for the acquisition of new aerial photography. GPS was used for the geodetic survey of existing trig stations and connection to 3 primary control stations of the Royal Thai Survey Department, which had been connected to the International Terrestrial Reference Frame (ITRF) network. Ground control targets were established and surveyed by GPS and spirit levelling. From the GPS geodetic network survey, Myanmar Datum 2000 was established by calculating the datum shift based on Everest Ellipsoid.

More than 60000 frames of 1:50000 aerial photographs were captured during the years 2000-2006 and more than 200 Ground Control Points (GCPs) were established. A total of 1146 sheets of 1:50000 National Topographic Maps were produced within a 7 year period.

## **From Plane Table to Satellites: The changing role of Technology in Military Mapping over 100 years**

**Dr Dennis J Puniard**

Major (R) Royal Australian Survey, part time lecturer at the University of Canberra in the Management School of the Faculty of Business Government and Law

From its inception in 1915 the Royal Australian Survey Corps was one of the leaders in the application of new technologies to map making. Whilst much of the early mapping of Australia carried out by the Corps was based on the use of the plane table and basic surveying instruments, the Corps was a very early adaptor of the use of aerial photography for mapping, especially during World War 2 in the Pacific region. The Corps was also a world leader in the development of automated cartography and Geographic Information Systems for mapping in the 1970's and beyond. The Australian Army has been at the leading edge of the use of satellite imagery for mapping. This presentation will explore the key developments of surveying and mapping technology applied to military mapping in Australia over the past 100 years.

## **SESSION 6**

### **Survey And Mapping The Anzac Sector On The Gallipoli Peninsula 1915**

**Lieutenant-Colonel Peter Jensen**

Lieutenant-Colonel Peter Jensen, B App Sc (Surveying and Mapping) WAIT, M Sc (Geodetic Science) Ohio State University

In the pre-dawn darkness on 25<sup>th</sup> April 1915, troops of the Australian and New Zealand Army Corps (ANZAC) found themselves with their backs to the sea and fighting for their lives on a few square miles of the precipitous and confused, sandy and scrubby terrain up to about six hundred feet above the sea of the mid-Gallipoli Peninsula in Turkey. This action was part of the broader British Gallipoli campaign, against the Ottoman Empire, which was to end in failure by the end of 1915, about sixteen months after the beginning of the First World War. The initial operations and intelligence map was adequate for general planning but it lacked the high fidelity terrain portrayal needed for the rapid light infantry operations in the very difficult terrain in which the Anzacs found themselves in and unable to break out of in any strength. The inadequacies of the initial map were due to military survey needs and methods at that time of the war and to failures of British high command to properly plan and resource the campaign. However, the Anzac surveyors and draughtsman in the engineer field companies and infantry battalions soon improvised to provide sketches and diagrams of Anzac and Turk positions and works. These early products were continuously improved from topographic and geodetic surveys, new methods of using aerial photography and captured Turk maps to provide reliable and accurate trench and operations maps needed for diverse demanding tasks such as targeting for artillery and naval gunfire, major offensives and counter attacks, trench raids, engineering tunnelling and mining when at times there was only a few yards between the Anzac and Turk front-line trenches. They did this in collaboration with British and French aerial photographers and soldier surveyors in the southern Gallipoli sector, the Mediterranean Expeditionary Force survey, mapping and printing organisations on Imbros Island a few miles west of Gallipoli and the work of the Survey of Egypt in Cairo and at Gallipoli.

## **‘Far from the Dardanelles’: reading the Gallipoli campaign in contemporary Australian newspapers and commercial maps**

**Dr Martin Woods**

Curator of Maps, National Library of Australia

The geography of the Gallipoli peninsula is probably better understood by Australians today, than by their 1915 counterparts. Without the benefit of regular travel or instant online mapping, readers in the early twentieth century were reliant on printed atlases and maps for details of foreign countries such as Turkey, Egypt or Palestine. We know that pilgrims soon followed in the footsteps of the Anzacs, almost before the war had ended. But far less is understood of how Australians read the geography and fighting at Gallipoli during the war. Before the campaign, map producers and educators considered the region ‘of very little interest to Australians,’ and distributed small scale mapping. In 1915, censors conspired to keep that distance. Journalistic cartography followed suit, and created an alternate geography and view of the fighting, driven by but quite different from actual events. This paper examines the maps, text and pictures available to consumers of Australian and British popular press, made possible by the National Library’s Trove database, and the Library’s collections. Fundamentally, it asks the question, if newspapers were the primary source of information about the war for most readers, what was the view of the fighting they understood to be happening? Related to this, what was understood of the Gallipoli landscape and how was it utilised during and after the campaign? Reliant on newsmaps or small-scale commercial maps (and not hindsight mapping), we may understand something of the processes at work - cartographic, ceremonial, and personal.

## **Hore Anzac Panorama’ – a survivor’s tribute to the Anzacs, August 1915**

**Dr Stuart Braga**

Author of *Anzac Doctor*, the life of Sir Neville Howse, Australia’s first VC winner and Kokoda Commander, the life of General ‘Tubby’ Allen

Captain L.F.S. Hore was one of very few officers to survive the tragic charge of the 8th and 10th Horse Regiments at The Nek on 7 August 1915. It is an event seen then and still seen as the greatest single catastrophe of the ill-fated Gallipoli campaign. Hore had already drawn forty-four sketches of Gallipoli. Recovering in hospital in Cairo from wounds that he suffered, and using this experience, he drew in similar style an annotated panorama of the entire Anzac position. Most poignantly, The Nek is marked ‘Where 8th & 10th L.H. cut up’. Hore had copies of the ‘Anzac Panorama’ printed in Cairo and sent them back to his wife in Tasmania where they were sold through a local bookseller. The National Library of Australia has recently acquired the only copy known in an Australian public collection. It reveals an intimacy with the critical situation faced in August 1915 by the Anzac troops that is very compelling.

## **The Role of the Australian Army (RA Survey Corps) in the Mapping of Papua New Guinea**

**Dr Dennis J Puniard**

Major (R) Royal Australian Survey, part time lecturer at the University of Canberra in the Management School of the Faculty of Business Government and Law

The Australian Army, through the Royal Australian Survey Corps, has played a major role in the mapping of Papua New Guinea over some 50 plus years. Leading up to and through World War 2, the Corps played a key role in providing mapping, firstly to stop the Japanese advance towards Port Moresby and then to support the Australian troops as they drove the Japanese out of the Pacific region. Since the 1950’s, but especially through the 1970’s and 80’s, the Corps completed the mapping of PNG with topographic maps and air charts. Through this period the Corps deployed soldiers throughout the country to complete the mapping of one the most inhospitable regions on earth. Supported by map makers back in Australia the Corps handed over the complete mapping at

	100 000 scale to the PNG Government in the 1980's and afterwards continued to support further mapping of key regions in the country at larger scales. This presentation will outline some of the key activities and achievements in completing this significant contribution to the development of our nearest neighbour.
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## SESSION 7

### **A strategy of disinformation: How and why Captain Cook concealed his discovery of Bass Strait from Britain's rivals**

#### **Margaret Cameron-Ash**

Margaret Cameron-Ash has practised, published and lectured in law. Her recent publications deal with the dilemma of pre-settlement Australia in the politics of Europe. Royal Society of NSW - Councillor

Most scholars agree that Captain Cook's failure to identify Tasmania as an island during his Endeavour voyage, was a genuine mistake. The presenter offers a different view – namely that Cook knew he had found Bass Strait in 1770, but deliberately falsified his maps and journals to conceal this fact from Britain's rivals. Tasmania was too costly for Britain to garrison in the short term, making it an ideal foothold for a rival maritime power to establish a base there or attack the mainland. The British Admiralty needed to protect such highly sensitive information and Cook's strategy of disinformation during his three Pacific voyages, was highly successful. The Admiralty maintained the secret of Tasmania's insularity for almost three decades, to the fury of the French

### **Identifying the Origins of Major Mitchell's Quotations, References and Footnotes in his "Three Expeditions"**

#### **Gregory C Eccleston**

Gregory C Eccleston, BSurv, LS (retired), MA, FRICS, FRGS is a former President of the Australian Map Circle and is an Honorary Life Member

Major Mitchell has been described as the most literary of all Australia's explorers. His book Three Expeditions into the Interior of Eastern Australia, published in 1838, with a second edition extensively revised in 1839, covers his first three major expeditions: those of 1831, 1835 and 1836 respectively. The book contains hundreds of quotations, references and footnotes. Usually, Mitchell did not feel the need to identify the authors of his quotations, it being a common conceit of the time that the reader would be sufficiently well-read to recognise the phrase being quoted. Apart from extracts from the Bible (KJV) and from the works of Shakespeare, which are easily identified, Mitchell quotes from the ancient classics, medieval scholars such as Maimonides, and contemporary works such as the literary falsehood of Ossian. Before the advent of search engines, I managed to identify almost all of these works. One very lengthy quotation, comparing Art with Nature, which Mitchell remembered (imperfectly) from his school days, was a great challenge, but was eventually identified when I spent a period of time in the National Library of Scotland, in Edinburgh.



## **Digitising the past – a return to Ludwig Leichhardt's Overland Expedition of 1844-45**

**Lauren Carter**

GIS Analyst, Fenner School of Environment & Society, Australian National University; GIS consultant based in Canberra

The Overland Expedition undertaken by Ludwig Leichhardt in 1844-45 was an extremely significant event in the exploration and subsequent settlement of northern Australia. The party set out to find a way across the continent from Moreton Bay to Port Essington, at a time when no other European had attempted such a feat. Leichhardt and his men kept detailed records of their journey as they drew numerous maps and sketches of significant landscape features such as rivers, creeks and mountain ranges. Upon their return to Sydney, a map of the expedition was produced by John Arrowsmith showing, in incredible detail, the route taken and the location of the 309 campsites the party utilised along the 443 day journey. Due to the public interest in explorers, the National Centre for Biography at the Australian National University decided to create a digital record of Leichhardt's expedition, which involved extensive research into the location of campsites and the route taken between them. In this presentation I will outline the resources required and the processes we followed to create two end products: an interactive online map and a large-scale wall map. The work presented many challenges and resulted in some interesting finds that will be discussed here.

## **Papua New Guinea: The North West Patrol Remapped**

**Noel Patrick Ticehurst**

1958 to 1970: A soldier/surveyor/photogrammetrist and member of the Royal Australian Survey Corps. Warrant Officer Class 2; Detachment Sergeant-Major at the PNG Goroke camp also team leader of the computing and records section

The original motivation to remap the routes of the North West Patrol came from Eric Johns who is writing a history of Papua New Guinea for PNG high school students. The object of this presentation is to describe how I interpreted descriptions taken from the 1926 to 1928 diaries of Charles Karius and Ivan Champion. These diaries cover the two North West Patrol expeditions. Although the first attempt from 3rd December 1926 to 10th June 1927 was abandoned. Much was learnt about this first attempt, especially from the solo journeys of Karius and Champion. The second expedition from 17th September 1927 to 30th January 1928 was the first successful European crossing of the widest part of PNG. Extracts taken from the diaries of these two PNG explorers and converted to maps in PNG high schools students' history books is a journey in two senses. Firstly there is the physical journey portrayed on the maps, where 1:100,000 scale Royal Australian Survey Corps maps are used as a base to plot the explorers' routes. Secondly there came an idea and from that idea the necessary methodology to produce a map which will engage the students. PNG students cannot afford to buy text books. Therefore, to keep costs of the history books to a minimum the maps must be black and white; no colour, no 3D. Instead a base map created by turning a hill shaded digital terrain model into an optical illusion simulating 3D was used as an alternative. Traditional mapping techniques and modern mapping software are used to transform Karius and Champion's descriptions into a map of an historical event.

## SESSION 8

### Retrieving the Cultural Biography of a Gun (or) Mapping the Surface of a Gun

**David Pearson, BA (Hons.) ANU, FSA**

Manager Digital Preservation , Acting NLA Council Secretary

In the pre-dawn darkness on 25<sup>th</sup> April 1915, troops of the Australian and New Zealand Army Corps (ANZAC) found themselves with their backs to the sea and fighting for their lives on a few square miles of the precipitous and confused, sandy and scrubby terrain up to about six hundred feet above the sea of the mid-Gallipoli Peninsula in Turkey. This action was part of the broader British Gallipoli campaign, against the Ottoman Empire, which was to end in failure by the end of 1915, about sixteen months after the beginning of the First World War. The initial operations and intelligence map was adequate for general planning but it lacked the high fidelity terrain portrayal needed for the rapid light infantry operations in the very difficult terrain in which the Anzacs found themselves in and unable to break out of in any strength. The inadequacies of the initial map were due to military survey needs and methods at that time of the war and to failures of British high command to properly plan and resource the campaign. However, the Anzac surveyors and draughtsman in the engineer field companies and infantry battalions soon improvised to provide sketches and diagrams of Anzac and Turk positions and works. These early products were continuously improved from topographic and geodetic surveys, new methods of using aerial photography and captured Turk maps to provide reliable and accurate trench and operations maps needed for diverse demanding tasks such as targeting for artillery and naval gunfire, major offensives and counter attacks, trench raids, engineering tunnelling and mining when at times there was only a few yards between the Anzac and Turk front-line trenches. They did this in collaboration with British and French aerial photographers and soldier surveyors in the southern Gallipoli sector, the Mediterranean Expeditionary Force survey, mapping and printing organisations on Imbros Island a few miles west of Gallipoli and the work of the Survey of Egypt in Cairo and at Gallipoli.

### User Experiences of the 1ATF in Vietnam Webmap

**Dr Amy L Griffin, Dr Bob Hall, Andrew , Dr T Ross, Peter Kimberley & Derrill de Heer**

Dr Amy Griffin is Senior Lecturer, School of Physical, Environmental and Mathematical Sciences Research UNSW, Canberra

Over the past several years, our team has worked to develop an interactive webmap based on our research into the history of the 1st Australian Task Force in the Vietnam War. While we have published our research in traditional academic outlets, to make our work more accessible to veterans and the broader Australian public, we also built a webmap where users can interactively interrogate our database of events, searching, for example, by unit, operation, date, or location. From 26 February 2015, after the formal launch of the website, veterans can also contribute their own recollections and memories of events in which they were participants. In this talk, we will demonstrate the webmap and its capabilities and show examples of the contributions by users to our website since it was opened to the public. It is our hope that these contributions will eventually also provide a valuable source of research data for historians researching the Vietnam War.

<b>Introduction to History Strategy Games</b>	
<b>Dr Christopher Cummins</b>	
Publisher, Strategy & Tactics Press and CEO, Decision Games. Dr. Cummins has been publishing magazines and games on military history for over 25 years.	
	History strategy games, more commonly referred to as war games, have been in use since ancient times. Strategy games throughout the ages have taught decision making, critical thinking, risk consideration, and, of course, strategy. Classic games such as chess and go, are reflective of the conflicts of their times and were used by the leaders of those periods to teach the tactics and strategies that were considered important for prevailing in battles and campaigns. In the early 1800's, the Prussian military developed kriegspiel (German for war game). Their use of war games as part of their officer training and in developing their war and battle plans became legendary with their battlefield successes. The use of war games by the public as a hobby was stimulated by H.G. Wells 1913 publication of Little Wars. In the 1960's, Avalon Hill published a series of war games launching the modern hobby and in the next decade, Strategy & Tactics combined magazines devoted to military history with a playable game in every issue, giving its audience an opportunity to read about battles and campaigns and then play them. This presentation provides recent examples of history strategy games with an emphasis on the evolving use of maps in these games.
<b>Map-making for History Strategy Games</b>	
<b>Dr Christopher Cummins</b>	
Publisher, Strategy & Tactics Press and CEO, Decision Games. Dr. Cummins has been publishing magazines and games on military history for over 25 years.	
	History strategy games, more commonly referred to as war games, generally come with a map depicting a battle or campaign. These game maps come in a variety of sizes from postcard to several square meters. They use one of several overlay patterns (e.g. square or hexagon grid) or styles (e.g. area or point-to-point) to facilitate the placement and movement of combat forces across the map. Game designers and game map artists often adjust some of the terrain features to simplify game play, conform to the overlay patterns or emphasize how particular terrain features affected the battle or campaign. This presentation reviews how the map space is chosen and best depicted with examples from recently published games.

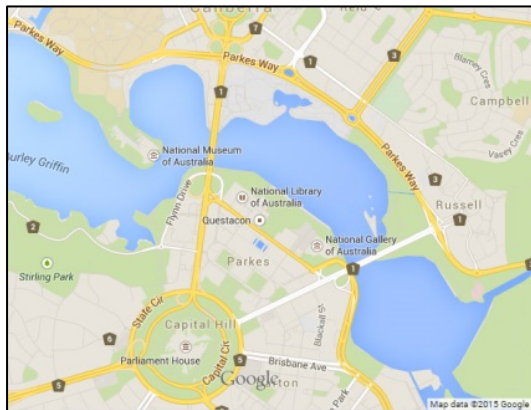
Selected papers will be published in the next edition of the ANZMapS journal 'The Globe'.

## VENUE

### National Library of Australia

The National Library is located on Parkes Place in the central Canberra suburb of Parkes in the Parliamentary Triangle.

There is ample paid parking for vehicles directly outside the National Library. Alternatively, the Library is a pleasant 2km walk from the central city, across the Lake Burley Griffin bridge. Buses from the city to the Albert Hall stop on Commonwealth Ave run every 5 mins, 7 am-7 pm, and every 10-15 minutes beyond these hours. Daily parking is \$12. For timetables and further information [action.act.gov.au](http://action.act.gov.au)



## FACILITIES

WiFi access available from National Library Australia

### Survey & Spatial Science Institute CDP Points

Wed 29 April – 6 CPD Points

Thu 30 April – 6 CPD Points

Fri 1 May- 4 CPD Points

16 CPD Points for the whole conference.

SSSI members will need to log their points manually post event.

## ACKNOWLEDGEMENTS

The conference organisers would like to sincerely thank the following institutions for making their staff and facilities available for the conference and tour.

National Library of Australia

Geoscience Australia

Australian National University College of Asia & the Pacific CartoGIS

Australian War Memorial

## FOR FURTHER INFORMATION

ANZMapS	<a href="http://www.anzmaps.org">www.anzmaps.org</a>
Mapping Sciences Institute, Australia	<a href="http://www.mappingsciences.org.au">www.mappingsciences.org.au</a>
National Library Australia	<a href="http://www.nla.gov.au">www.nla.gov.au</a>
ANU:CartoGIS	<a href="http://asiapacific.anu.edu.au/cartogis/">http://asiapacific.anu.edu.au/cartogis/</a>
Royal Australian Survey Corps	<a href="http://rasurvey.org/">http://rasurvey.org/</a>
ANZAC centenary	<a href="http://www.anzaccentenary.gov.au">www.anzaccentenary .gov.au</a>
International Cartographic Association	<a href="http://icaci.org/">http://icaci.org/</a>
International Map Year 2015	<a href="http://internationalmapyear.org">http://internationalmapyear.org</a>
Barabara Petchnik Competition	<a href="http://www.mappingsciences.org.au/barbara-petchnik-childrens-map-competition-2015">www.mappingsciences.org.au/barbara-petchnik-childrens-map-competition-2015</a>



