

**CUMULATIVE LIST OF PRESENTATIONS GIVEN AT DSA AND RELATED SEMINARS 2007-2017.**

Most of the seminars listed below have taken place at the Royal School of Military Survey at Denison Barracks, Hermitage village near Newbury, Berks.

Synopses were not noted in detail for the early seminars.

**Maps & Surveys 2007, DSA Seminar at Hermitage, 2 June 2007.**

**Three Centuries of Geographic Support to the British Army.**

By Dr. Yolande Hodson. DSA.

A selection of survey and mapping highlights from home and abroad in times of war and peace.

**A Study in Innovation. The Battlefield Laboratory – Acoustic Weapon Locating in the Great War.**

By Stephen Young.

The World War One sound-ranging instrument developed by Lawrence Bragg.

**Mapping for The Third Battle of Gaza 1917.**

By Dr. P Collier. University of Portsmouth.

**Military Survey's Cavemen – 512 (Army) Field Survey Company R.E. 1939 – 1947.**

By Alan Gordon. DSA

A brief overview of a unique military surveying unit and forebear of 42 Engineer Regiment (Geographic) which served in the Tura Caves near Cairo for part of World War Two.

**Mapping for the Falkland Islands War 1982.**

By Liz Manterfield & Dr. John Peaty. DGC.

Later published in Ranger.

**HALO - Sound-Ranging's Present Day Equivalent.**

By Maj. Richard Perry R.A.

Including its use in Iraq.

**Geographic Support in Afghanistan 2006-2007.**

Lt. Col Pat Fryer R.E.

An update on the work of 42 Survey Engineer Regiment etc.

**Maps & Surveys 2008, DSA Seminar at Hermitage, 21 June 2008.**

**Castles in the Air.**

By Rose Mitchell. The National Archives, Kew.

Sixteenth Century Fortification Plans in The National Archives.

**Mapping the East Anglian Invasion Coast 1799.**

By Dr. Yolande Hodson. DSA.

**The Cruise of the Pegasus.**

By Mike Nolan. DSA.

The early acquisition of aerial photography for survey by seaplanes of H.M.S. Pegasus and its utilization on Capt. Wace R.E.'s innovative topographic survey of Hong Kong 1924.

**Intelligence Maps of the Ardennes Offensive 1944.**

By Christopher Hunt. Imperial War Museum.

The allied assessment of the situation based on current Intelligence Situation Maps.

**Crossing the Digital Threshold.**

By Alan Gordon. DSA.

From Multiplex to aerial triangulation and the early use of digital equipment in Military Survey.

**Military Geographic support to Current Operation.**

By Cpl Kempster R.E.

A briefing on geographical support to current operations in Afghanistan or Iraq by a survey/geo soldier recently serving in the theatre of operations.

**Royal Artillery Survey Support to Current Operations.**

WO2 Cartwright R.A.

A briefing on mortar locating capabilities for current operations in Afghanistan and Iraq.

**ICA Symposium of the Commission on The History of Cartography in the 19<sup>th</sup> & 20<sup>th</sup> Centuries,  
University of Portsmouth, 10 September 2008.**

**The Style Sheet for the War Office Series GSGS 1764 Cape Colony Reconnaissance Series.**

By Christopher Board.

**Not Just Trench Maps.**

By Dr. P Collier. University of Portsmouth.

**The Emergence of the Admiralty Chart in the Nineteenth Century.**

By Andrew David.

**The British Military Mapping of Hong Kong & The Cruise of HMS Pegasus.**

As given already at the DSA seminar 2008.

By Mike Nolan. DSA.

**The Contribution of the 1:1,000,000 scale International Map of The World Etc.**

By Alastair Pearson. University of Portsmouth.

**The English Patient – Exploration, Mapping & War in the Libyan Desert.**

By Zsolt Torok.

**Who Ran the British Admiralty's Hydrographic Office between 1808 and 1829?**

By Adrian Webb.

**Maps & Surveys 2009, DSA Seminar at Hermitage, 20 June 2009.**

**In the Footsteps of Shackleton.**

By Brig. John Elder. DSA.

Surveying and mapping work and other scientific research on an expedition in 1970/71 to the Antarctic (Elephant Island, South Shetland Islands) is described briefly. Elephant Island is where the members of Sir E. Shackleton's 1914/17 Trans-Antarctic expedition took refuge in 1916. Slides and film footage are used to illustrate this expedition with an emphasis on leadership in the face of adversity.

**Models in Camera - Allied Model-Making during World War II.**

By Dr. Alastair Pearson, University of Portsmouth Geography Department.

Modern techniques enable a detailed landscape to be constructed as a facsimile of reality, providing opportunity to move through or fly over the landscape. Such simulations using digital terrain models are employed as essential visual aids for briefing and training military personnel prior to land, air and sea operations. However, we should not view these capabilities as necessarily new. This paper charts the development and examines the role of terrain models during World War Two, a period prior to the development of computer-based modelling, when sophisticated terrain models were invaluable briefing and training aids for key military operations..

**Mapping for a Multilingual Military Alliance; the Case of East Germany.**

By Dr. John Cruickshank - Doctor, Historian and Charles Close Society member.

A description of the "In tandem" East German Military/Civil Organisations and the multilingual approach to Warsaw Pact mapping with examples of East German/Russian/Polish maps and East German training manuals.

Later published in the DSA Journal "Ranger".

**The Inter-Entity Boundary Line in the Balkans 1995-96.**

By Brigadier Nick Rigby. DSA.

The Inter-Entity Boundary Line (IEBL) was drawn on satellite imagery in Dayton, Ohio, using felt tip pens. Nick Rigby was then responsible for the detailed negotiations with the three former warring factions to agree precisely where this boundary was on the 1200 km of ground it covered. Over 30 meetings took place, some attended at Vice-President level of each of the former warring factions.

Later published in "Ranger".

**Royal Artillery Unmanned Aerial Vehicles.**

By WO2 Power? 32 Regiment Royal Artillery.

A briefing covering experience in the operation of the Royal Artillery's "Hermes" unmanned aerial vehicle (UAV) and Mini Unmanned Aerial Vehicle (MUAV) in current operations in Iraq/Afghanistan.

Hermes is similar to the RAF's "Predator" but utilised by the R.A. in a different way.

**Current Operations/Techniques - Royal Air Force Unmanned Aerial Vehicles.**

By Flt Lt Dex Halpin RAF

A briefing on the "Reaper" UAV operated by 39 Squadron Royal Air Force in Afghanistan.

**Tunnelling & Mining Survey in World War One.**

By Lt. Col. Philip Robinson. DSA.

The scene is set with a brief background to the scale of the mining endeavour; with illustrations of the complexity of some of the both British and German mining systems. Considerable positional precision was needed both to counter and attack enemy miners and to place mine charges under enemy positions accurately. The survey techniques evolved and the particular complications of working both in the front line and within the very confined and dangerous circumstances of the tunnels will be illustrated with examples from the Messines mining offensive.

**Maps & Surveys 2010, DSA Seminar at Hermitage, 19 June 2010.**

**“A distinct and separate corps something similar to that of the Engineers of the Army”: War-time Experience, Peace-time Opportunity, and The Emergence of the RN Hydrographic Service, 1803 to 1823.**

By Capt. Mike Barritt, R.N. Vice-President Hakluyt Society.

This presentation will complement a February 2010 “Maps and Society” lecture at the Warburg Institute London, analysing the wartime operations which furnished Captain Thomas Hurd RN with a cadre of skilled Royal Naval hydrographic practitioners. It will discuss cross-fertilisation between Engineer and Royal Staff Corps surveyors and RN counterparts in such campaigns as the Peninsular War, and the successful establishment of a hydrographic specialization mirroring military arrangements following the peace of 1815.

**The Report on the Military Map of the U.K. 1892.**

By Dr. Peter Collier of Portsmouth University.

In 1892 a committee was established to take evidence from serving officers, and then to make recommendations on the scales and designs of maps for use by the British Army in the United Kingdom.

The recommendations resulted in the design of what became the Ordnance Survey 3rd series 1" map.

The adoption of a clean, clear, appearance for the map provided the British Army with a map far better than that available to continental armies. It also provided the model upon which most 20th century mapping was to be based.

**Charles Close - His role in African Boundary Demarcations.**

By Dr. John W. Donaldson, International Boundaries Research Unit, University of Durham.

A review of Charles Close’s involvement as a young RE officer with demarcations in East and Central Africa, describing the surveying work undertaken and its integration into national frameworks, the wide range of other scientific activities, the quality of some of the mapping produced and an account of some of the unusual experiences that these jobs in remote parts of Africa in the early 20<sup>th</sup> Century frequently provided.

**The Links between Photo Interpretation, Intelligence and Photogrammetry.**

By Chris Halsall, a former Chief Instructor of the Joint Services School of Photographic Interpretation and a Trustee of the Medmenham Collection.

An introduction to the Medmenham Collection at DISC Chicksands, the importance of photogrammetry to Intelligence and Imagery Analysis, the surviving collection of photogrammetric machines at Chicksands, with emphasis on the Wild A5, some examples of successful imagery exploitation from the Cold War era, and a look to the future of Geo-Int and the Collection at RAF Wyton.

**Accurate Distance Measurement before the advent of Electronic Distance Measurement.**

By Jim Smith, author of “Everest The Man and the Mountain”.

A talk illustrating how accurate survey measurements were made before 1957, that is, before the Tellurometer, concentrating on the history of methods of base measure up to the use of catenary measure, thus illustrating that what took 40 men 6 weeks to measure in 1957 took 2 men 20 minutes the following week. This paper lead into that given by Alan Wright.

**Trevor Wadley and 50 years of the Tellurometer.**

Alan F. Wright previously of Tellurometer (UK) Ltd and with the British Antarctic Survey, now with Global Surveys Limited.

The presentation will cover the background of the invention of the Tellurometer by Dr. Trevor Wadley, the development of the various models, with illustrations, some of the wide range of field applications and comments on the current models still in production.

**Technologies For Fusing GIS, Terrain and UAV Data in Realtime Intelligence Support.**

By Richard Goodman, Principal Application Engineer, SG&I, Intergraph UK Ltd.

Intergraph’s Motion Video Analyst solution, based on GeoMedia GIS, fuses and displays video data, including data from uninhabited aircraft systems (UAS), with satellite imagery and geo-intelligence, delivering an exceptional level of actionable intelligence in real time, providing the INTEL analyst with a single source for video intelligence, with playback, annotations and querying for advanced analysis.

**Maps & Surveys 2011, DSA Seminar at Hermitage, 11 June 2011.**

**3000 Years before Euclid, the first Land Surveyors,**

By Michael Cooper, Emeritus Professor City University, Visiting Professor UCL.

Mesopotamian clay tablets from around 3300 BC are the earliest evidence of measuring and valuing land. Who were the first surveyors? How did they measure fields and calculate areas? What was their position in society? Did they have a role in warfare? Answers will be offered. A surveyor's cuneiform tablet will be decoded to reveal the first known numerical blunder by a surveyor.

**Tudor Maps for the Defence of Portsmouth**

By Dr. Dominic Fontana, Department of Geography, University of Portsmouth. DSA.

Portsmouth's town, dockyard and harbour were crucial to the defence of England and were under serious threat of invasion during the Tudor period. The maps used in planning the military response to these invasion threats are considered in turn and compared the "Cowdray Engraving", which depicts the battle scene off Portsmouth on the 19 July 1545 during the French invasion attempt.

**"A Curious Organization" - The Air (Survey) Liaison Sections 1942–1946.**

By Mike Nolan, DSA and late RE Survey.

In just four years, eight Air (Survey) Liaison Sections were raised to co-ordinate and evaluate aerial photography for "Survey" purposes in World War Two. The work of these sections in obtaining photography for Z(M) Beach Charts, for D-Day Normandy mapping, for advanced airfield site surveys in Normandy, and similar work in Sicily, Italy, Burma and Malaya including work on escort aircraft carriers in support of 888 Squadron, Fleet Air Arm, is described.

**The 1950's Mobile Train - A Timely Dinosaur.**

By Rod Siggs, Capt RE (Ret'd) and DGC Civil Servant (Ret'd)

By 1991 the mobile print train was virtually a set of static containers. Its history, as a development of World War Two field-deployable reproduction equipment, its introduction into service, the continual updating of its internal equipment and its timely mobilization for Op Granby, Iraq 1991.

**What Goes Up Must Come Down? - Russian and Soviet Military Mapping Since 1900.**

By John L Cruickshank, Retired Orthopaedic Surgeon.

In 1904-05 the Russian army found itself fighting (and losing) a war across an un-surveyed part of its own territory. Similar problems arose in further wars through the first half of the century and yet by the 1980s the entire world had been mapped at topographic scales. Factors and events influencing this rise, and the subsequent decline, will be examined.

**Surveying for Safety – Modern Hydrographic Surveys on the U.K. Continental Shelf.**

By Chris Howlett, U.K. Hydrographic Office, Taunton.

Although, as the previous speaker states in his synopsis, "by the 1980s the entire world had been mapped, the seas and oceans remain largely un-surveyed. Only 49% of the U.K. continental shelf is surveyed to the most modern standard, 22% is surveyed but needs updating and 29% has never been systematically surveyed. This presentation will describe the methods used to survey the U.K. Continental Shelf, explain what "modern standards" means and examine why hydrographic charting is lagging behind land mapping.

**Maps & Surveys 2012, DSA Seminar at Hermitage, 16 June 2012.**

**The Gough Map: the first modern map of Britain?**

By Nick Millea, the Bodleian Library, Oxford.

Dating from the late medieval period, the Gough Map is internationally-renowned as one of the earliest maps to show Great Britain in a geographically-recognizable form. Yet to date, questions remain of how the map was made, who made it, when and why.

By combining existing research and GIS, and collaborating with a variety of partners, we can now shed some new light on the map's possible history and function, and broaden the debate on its significance as an artefact.

**Wellington's Surveyors in the Peninsula War.**

By Dr. John Peaty, Defence Geographic Centre.

A major contribution to the liberation of Portugal and Spain from the French was the superb intelligence service developed by the British Army which enabled Wellington to know to a remarkable degree what was "on the other side of the hill". Our understanding of Wellington's intelligence service in the Peninsular War has been transformed in recent years but the contribution of British surveyors and map-makers during and after the campaign remains unappreciated. This paper examines the work of those surveyors and map-makers.

**Capt James White Worsley R.E. – His Maps of Corfu and Malta 1824.**

By Mike Nolan, DSA.

This presentation describes the life and career of Captain James White Worsley R.E. including graphic examples and description of his maps made as a Cadet and his surveys and maps of Malta and Corfu made during the Post-Napoleonic period of occupation by the British. Worsley's well-known two-inch map of Malta was not engraved and published till 1856 but it then remained in use till the end of the nineteenth century.

This talk was given in the hope it might stimulate research into Worsley's missing six-inch map of Malta.

**Surveying the "Ulu" – A Troop Commander's tour in Sarawak 1964-1966.**

By Major General (Retd) Roy Wood, DSA.

84 Survey Squadron R.E. and the Directorate of Overseas Surveys were already working in Borneo when the Brunei Rebellion took place in late 1962. There followed four years of Indonesian Confrontation with Malaysia during which time field surveyors from 84 Squadron, and the Directorate of Overseas Surveys were engaged in providing planimetric control and altimeter heighting for the Series T735 1:50,000 scale map series of Brunei, Sarawak and Sabah.

**Photographic Intelligence Gathering in the Berlin Corridors.**

By Major (Retd) Peter Jefferies, TD Int Corps and Medmenham Club.

The presentation describes the RAF reconnaissance operations in the Berlin Air Corridors and Berlin Control Zone from 1945 until their termination in 1990, including the aircraft involved, the modus operandi, some of the analytical methodology and what the international Intelligence Community gained from them. It also covers what we believe the Russians and East Germans knew about the operations.

**Current “Geo” Operations.**

By Col. M. R.H. Burrows and others from Joint Aeronautical and Geospatial Organization(JAGO).

The initial part of the presentation will focus on recent trends and developments within JAGO with a bias towards providing Geo support to recent operations in Afghanistan and Libya. The latter part of the presentation will focus on the future trends, based around the Ministry of Defence’s publication “Future Characteristics of Conflict”.

**Maps & Surveys 2013, DSA Seminar at Hermitage, 22 June 2013.**

**Hurd’s Survey of Bermuda.**

By Adrian Webb. U.K.Hydrographic Office.

Following the loss of the 13 colonies the security of Bermuda was brought to the forefront of strategic planning for the Atlantic and Caribbean. This paper describes the cartography of Bermuda and its relationship to the defence of the Islands. A key episode in this story is Lt. Thomas Hurd R.N.’s detailed mapping exercise covering both land and sea, which commenced in 1789. Hurd was assisted by Lieutenant Andrew Evans, at least three pilots and two draughtsmen in a work that lasted almost a decade.

**Hugh Hamshaw Thomas – His involvement in & Development of the use of Aerial Photos for Map-Making.**

By Chris Halsall, The Medmenham Club.

Hugh Hamshaw-Thomas was a leading light in the early days of photographic interpretation (PI), in both First and Second World Wars. He laid down the groundwork for PI in the Middle East in the First and developed the exploitation of Industrial PI in the Second. In between the wars and after 1945 he was a leading palaeo-botanist at Cambridge. He developed the use of air photographs for map making in the Middle East and in 1918 went on to sell his ideas on this to the General Staff in India and to the Surveyor General, Sir Sidney Burrard, KCSI, FRS. A copy of his interesting original draft report on this, is being transcribed.

**Credit Due To The Few - Specialist Maps and British Field Force Geologists of World War II.**

By Ted Rose, Honorary Research Fellow, Dept of Earth Sciences, Royal Holloway, University of London. Senior Corps Geologist 1974-1990. The British Army made use of few geologists as such during World War II: notably Major Bill King in France 1939-40; Captain Fred Shotton in Egypt 1941-43; Captain/Major Steve Stephens in Sicily/ Italy 1943-45; Bill King succeeded by Fred Shotton for D-Day planning and subsequent operations in NW Europe 1943-45. However, these ‘field force’ geologists, pioneers of present-day Corps geologists, were complemented by other expertise, from 1943 including military geologists in India, the UK and the USA who compiled specialist terrain intelligence maps/reports.

**Moving Map Displays – Forty Years of Support to R.A.F. Navigation by Defence Geographic Centre.**

By Richard Chesney, Defence Geographic Centre.

This presentation describes moving maps before 1967, subsequent Survey Production Centre RE involvement in the Harrier, Jaguar and Tornado requirements, how these were met by use of Map Rectification Machines to produce filmstrips, how they worked, the major products and their supersession by later digital systems.

**Mulberries and Gooseberries the 2011 Hydrographic Survey of the D-Day Beaches.**

Chris Howlett, U.K. Hydrographic Office.

In September and October 2011 a team of hydrographic surveyors from the UK Hydrographic Office conducted an extensive survey of the remains of Mulberry B located at Arromanches-les-bains on the Normandy coast. The survey used a modern multi-beam echo sounder, to record the submerged remains and a terrestrial laser scanner for above water elements to gather a complete above and below water data set of the remains.

**Boundary Battles – A Legacy of Empire?**

By Alastair Macdonald, ex DOS/MCE/OS.

Over the last 15 years, Alastair Macdonald has been involved in advising the legal teams of seven countries who have been trying to sort out disputes over their international boundaries. Four of these have involved, at great expense, the International Court of Justice or some other similar arbitral body. The talk will provide some examples of the geographical conundrums that, through ill-written treaties and the lack of sound geographical knowledge at the time, the Imperial Powers left to their colonies for resolution after independence.

**Maps & Surveys 2014, DSA Seminar at Hermitage, 20 June 2014.**

**“Under Every Leaf” – The Intelligence Division of the War Office.**

Dr William Beaver, Wolfson College, Oxford.

For years histories of the Ordnance Survey alluded to its brief organisational flirtation with the Army in the 1850-60s and returned quickly to their main theme, leaving Army mapmaking, if it existed, spinning off into outer darkness. But wait. Is that so? What happened to the military side of map making? Was Stanfords really the Foreign Office’s map repository?

What role did maps really play in the winning of the greatest Empire the world has ever seen, one which was gained without the cost of either a great Asian or European war?

As *Private Eye* used to say, ‘I think we should be told’.

**Gunners on the Grid: Photogrammetry, Engineer and Artillery Survey in the First World War.**

Dr. Peter Chasseaud.

The British survey organisation created a refined battlefield geometry for the artillery, part of an integrated weapons system which restored surprise to the battlefield and turned the British Army into a formidably efficient war-winning force. This presentation demonstrates the development and effectiveness of the increasingly close relationship between the Field Survey Companies (later Battalions) RE, the Royal Artillery and the RFC/RAF in the crucial areas of mapping, photogrammetry, battery survey, predicted fire, flash-spotting and sound-ranging in the context of similar developments by the French and Germans.

**Geo-referencing World War 1 Western Front Maps with GPS/WGS.**

Jerry Whitehead.

The Great War of 1914-1918 as fought on the Western Front was a fairly static affair for much of its four year duration.

Thousands of miles of trenches and fortifications were constructed and mapped in great detail by all the combatants and in particular the British Army. This presentation will seek to explain the motivation behind a project to collect a comprehensive digital archive of British trench maps of the Western Front and development of methods to present them on a modern computer platform to be accessible to both casual observers and serious students of the First World War both on the battlefields and in the comfort of home or office.

**63 Map Reproduction Group I.E. in Burma 1943-1945.**

Ray Bennett, ex member of 63 Map Repro Group, now 92, & Chris Nash, Chairman DSA designate.

63 Map Reproduction Group formed up at Comilla in Bangladesh in 1943, moved to Imphal, took its 10-ton Foden Press and Photo-Mechanical vehicles and other equipment over the mountains past Kohima to Tamu and thence by river and road to Rangoon. In the process it provided 14<sup>th</sup> Army with 1:25,000 scale maps of the advance from materials provided by the Indian Air Svy Group.

**The Sene-Gambian Connection**

Robin Waters and Major (Retd.) Alan Milne.

The ‘12<sup>th</sup> Parallel’ was an American-funded traverse across the Sahel from Senegal to Sudan measured between 1966 & 1970. In 1976/77 the Directorate of Overseas Surveys was asked to connect the existing Gambian survey network to the 12<sup>th</sup> Parallel to help define the Gambia/Senegal boundary and assist with mapping. The Sene-Gambian Connection took nine months with two British surveyors managing three surveyors each from the Gambia and Senegal. Robin Waters, the Project Leader from DOS and Capt. Alan Milne R.E. on secondment to DOS recall one of the last major Bilby Tower traverses with interesting comments on the political, religious, instrumental and language issues around this multinational project.

**Soviet Maps and Town Plans.**

Dr. Alex Kent and John Davies.

There has been comparatively little research on the Soviet military mapping of hundreds of towns and cities around the globe since these formerly highly secret plans were first made available to the West in 1993. This talk will examine the plans of British towns and cities produced by the Soviet Union from the 1940s to the 1990s and explore how the information was gathered. In particular, we will examine some of the more interesting ‘quirks’ which have been identified and explain what these might reveal about how these fascinating plans were made.

**Maps & Surveys Mini-Seminar at The Gurkha Museum Winchester, 21 March 2015.**

**A Great Roll of Smoke – The Archaeology of Combat in the American Indian Wars.**

By Dr. Mike Athanson – Bodleian Library, Oxford.

Over the past 30 years, archaeological surveys of historic battlefields throughout the United States have provided new insights into the nature of violence and warfare on the American frontier. This paper presents recent discoveries made from analyses of combat-related artefact patterns: evidence of Lakota, Cheyenne and Arapaho warrior elites at the Battle of the Greasy Grass (1876), a rare appearance by horse artillery at the Battle of Red River (1874) and the coralling of a supply column at the Battle of Lyman’s Wagon Train (1874).

**‘At the Junction of a Map: The Role of Kohima in the Strategic Considerations of the British and Japanese in the Struggle for India, 1944’.**

Dr. Robert Lyman.

This talk will examine British and Japanese attitudes respectively to the importance (or otherwise) of the Naga hill station of Kohima in 1944; with direct reference to command decision-making on both sides, both good and bad; and its impact on the outcome of the battles that followed, together with the fate of India.

**“Kohima, An Exploration of War, Memory and Gratitude” & The Kohima Educational Trust.**

Mrs Sylvia May & Dr. Robert Lyman.

A brief introduction to the origin and work of the Kohima Educational Trust prior to the showing of the 49-minute film, narrated by Diana Rigg, on The Battle of Kohima and the work of the Kohima Educational Trust.

**Maps & Surveys 2015, DSA Seminar at Hermitage, 27 June 2015.**

**Maps and Mapmakers of the Napoleonic Period.**

By Dick Tennant, Amateur Historian & Member of the British Commission for Military History.

This presentation will introduce some of the map-makers of the Napoleonic period and will describe and later display many of the British and other maps of the campaigns, including, notably, an example of Wyld’s magnificent Atlas of the Peninsula Campaign battles.

**Military Mapping in the Nineteenth Century United States.**

*“Not a single individual, whom we could see introduced into the Corps of Engineers without mortification or pain” The U.S. Army Corps of Topographical Engineers, 1813-1863.*

By Professor Imre Demhardt, Garrett Chair in the History of Cartography (University of Texas at Arlington).

The unfortunate outcome of the War of 1812 made the United States realize the need for reconnoitering and cartographic representation of current and future Theatres or War. From a fledgling start in 1813 the specialist group commissioned with that task ultimately evolved into the U.S. Army Corps of Topographical Engineers. However, the Corps could not focus on the reconnaissance of ‘Manifest Destiny’, the conquest of the continent, since politicians charged the surveying experts with civilian tasks, ranging from improving ports to the survey of railroad routes. Nevertheless, the ‘Topogs’ took part in most of the military engagements, most notably the U.S.-Mexican War (1846-48).

**Maps and Surveys in the Dardanelles Campaign 1915.**

*“In no other theatre of war were overlapping and lack of touch in survey matters so marked.”*

By Mike Nolan DSA.

Was this so? This presentation will look at geographic intelligence before the campaign, the state of both Turkish and British maps and charts in 1915 and British, French and Australian survey work during the campaign including the innovative use of aerial photos for mapping developed quite independently from the similar work carried out on the Western Front.

**British Antarctic Surveys Mapping of South Georgia.**

By Dr. Adrian Fox, Head, Mapping and Geographic Information Centre, British Antarctic Surveys, Cambridge.

After a review of the material available to Shackleton in 1916, this talk will first describe how the 1958 D.O.S. 1:200,000 scale map of South Georgia was pieced together from the work of early explorers, including the expeditions led by Duncan Carse in the 1950s.

Later Hydrographic and B.A.S. surveys, and the current B.A.S. production of a series of maps at 1:25,000 scale of key ice-free areas needed for tourism, for the monitoring and eradication of rat infestation work and for reindeer removal, by photogrammetry from high-resolution satellite imagery and GPS ground control will then be described.

**Gunner Platforms & “Watchkeeper” Tactical Unmanned Aerial System.**

By Major Jack Papenfus R.A. & Captain Nick Sharp R.A.

Over the last decade, the Royal Artillery has undergone significant change, from supporting operations to rebalancing and now implementing A2020 contingency measures. However, the Gunners continue to provide the Army and Defence with an array of potent capabilities. This presentation will aim to provide an update on the recent changes, principally focused on the training for future operations in this uncertain world, platform capability including the introduction of WATCHKEEPER Tactical Unmanned Aerial System into core.

**Exercise “High Trig” – Surveying in Nepal 1982-1985.**

By Jon (Zed) Zorichak Major R.E. (Retd).

To assist Nepal and the Nepal Survey Department, 19 Topographic Squadron RE executed a first order triangulation of Nepal, working from east to west and from the hot, flat Terai plain in the South, through 12,000 ft high hill country up into the Himalayas at over 17,000 ft working during each of three successive dry seasons. This presentation will describe both the modern helicopter support and the traditional sahib trekking methods used in this fascinating country.

**DSA Annual General Meeting, Lecture & Dinner Night 10 Sep 2015.**

**“High Command”**

By Major General C. Elliott.

General Elliott set the scene by discussing the complicated and complex nature of present-day conflict in the context of British military leadership as experienced in Iraq and Afghanistan. He suggested that faith in our top officers had been eroded, both missions lacking a clear mission and strategy backed by appropriate resources. In this the UK Government had failed its military.

**Royal Institute of Navigation, East Midlands Branch Seminar, Nottingham University 16 Jan 2016**

**‘That laborious and dangerous service’: Charting the North American Pacific Coast, 1791-1795**

By Lena Moser, University of Teubingen.

In 1791, just over ten years after James Cook’s fateful last expedition, two ships the *Discovery* and the *Chatham* left England under the command of Captain George Vancouver on a voyage of exploration. The mission was political as well as scientific: Vancouver was to act as the British negotiator at the Nootka Convention, with the aim of settling a highly charged dispute about North American territories claimed by both Britain and Spain.

In addition, his orders instructed him “to make an accurate survey of the coast, from the 30th degree of north latitude north-westward toward Cook’s River; and further, to obtain every [sic] possible information that could be collected respecting the natural and political state of that country.”

That part of Vancouver’s orders, too, was of course highly political: charts were instruments of power, and those equipped with the best geographical information were at a great advantage in war as well as in trade.

Although the voyage was largely a success, Vancouver, in contrast to Cook, was not welcomed as a hero, and the expedition is largely forgotten today. This is true even more for those who undertook the bulk of the actual charting work: Joseph Whidbey and James Johnstone, the masters of Vancouver’s two ships, with their respective assistants. The talk discusses the political significance of the scientific part of Vancouver’s instructions and looks at charting practices during the voyage, focussing especially on Whidbey’s and Johnstone’s role in putting the North American continent, quite literally, “on the map”.

**Royal Air Force Target Materials 1939-1943.**

By Mike Nolan, DSA.

Following a brief review of aerial charting in World War 1 and the Air Packet Flying Maps and developments in the inter-war years, this presentation described the development of Target Maps, Target Illustrations and Target Information Sheets in Bomber Command, MEAF and 3 TAF using information recently found in The National Archives and the Air Historical Branch, RAF Northolt.

**“The Pembroke C(PR)1, an unlikely spy plane” - Pembroke Operations in the Berlin Air Corridors.**

By Paul Hickley FRIN.

How two of the most innocuous-looking aircraft in the RAF’s inventory provided a constant stream of exceptionally valuable intelligence during the Cold War over a period of forty years’

**The RE8 of the 1980s - Chipmunk Operations in Berlin.**

By David Cockburn FRIN.

Even in Cold Warfare, the knowledge of “what lies over the hill” was vital to commanders. Someone had to do it without being exactly clandestine or stretching international relations too far.

**Maps & Surveys 2016 - DSA Seminar at Hermitage, 2 July 2016**

**The Tanks at The Somme 1916.**

By Lt Col (Retd) Gareth Davies RTR.

This presentation will describe the evolution of the tank during the First World War and its employment on the Somme battlefield. It will look at why the tank was introduced, how tactics evolved and why the ground on which they operated could have a major impact on their success or otherwise.

**Corps Reconnaissance in World War One.**

By Jeff Jefford MBE BA, Editor, Journal of RAF Historical Society.

Corps reconnaissance on the Western Front was essentially a short range tactical business, aircraft rarely venturing more than 50 miles from home. This talk considers the evolution of the tools of the trade - wireless, photography, the artillery code, the clock code, trench maps, etc. and how they were all put together to conduct ‘an artillery shoot’.

**The National Collection of Aerial Photography & Operation Crossbow.**

By Allan Williams, The National Collection of Air Photography/The Air Reconnaissance Archive, Edinburgh.

Synopsis mislaid

**Surveying the Falkland Islands & Dependencies.**

By Chris Brading, late Directorate of Military Survey and Falkland Islands Dependencies Survey.

Use of the first tellurometers in the Antarctic in 1958 by FIDS. Learning how to use them in the Falkland Islands, including measuring base lines to control the DOS mapping, through to measuring across the Bransfield Strait from the South Shetland Islands to the Antarctic Peninsula. In conclusion I would also touch on the overall triangulation of the northern peninsula which I was involved in.

**Vietnam War – Vagaries of Mapping, Gunnery, Navigation & Searchlights.**

By John Tulloch, MBE, late RA, RNZA.

The application of Indirect Fire to support and create Mapping, provide temporary Survey and assist Navigation in the Jungle. The lack of reliability and vagaries of some mapping of the jungles of Vietnam prompted innovative ways of mapping, survey and navigation within the jungles patrolled by the ANZACs.

Using field artillery and the application of sound and bearing as a survey tool, basic operational maps of the jungle were created called 'Road Maps' and became a vital tool. Temporary future artillery locations were surveyed using artillery. This was "back to basics" soldiering.

**The Advanced Geospatial Information & Intelligence Services (AGIS) Research Project.**

By James Prain, Dstl

James Prain is the MOD sponsor for the AGIS project which has been running for four years and has been delivered by the GeoCore consortium led by Envitia in partnership with Helyx, QinetiQ and University of Nottingham.

The presentation will cover highlights of the ten research topics that have been covered by this project.

**Maps & Surveys Mini-Seminar at The Royal Greenjackets' & Gurkha Museums, Winchester, 20 April 2017.**

**Myth or Reality - The Battle of Cambrai.**

By Stuart Wheeler, Archive Manager, The Tank Museum.

An assessment of the role played by tanks at the Battle of Cambrai 20th November 1917

**Colditz and Srebrenica – Two Tales of Incarceration.**

By Vere Hayes, RGJ.

A brief introduction to the Royal Greenjackets will be followed by an account of the escaping experiences of Mike Sinclair KRRC in World War Two after his capture at Calais in 1940. After at least five escapes, three from Colditz, he was tragically shot on the final attempt. The talk is followed by an account of how Srebrenica in Bosnia was made a safe area in 1993 and its fall to the Serbs in 1995.

**Waterloo - Wellington's greatest Victory or Napoleon's biggest Blunder?**

By Nick Lipscombe.

Few events in human memory have had the impact of Waterloo. Two military giants collided; one emerged victorious, while the other fell from grandeur and absolute power never to rise again. Was the triumph a patent measure of Wellington's martial prowess or was the baton of victory handed to him by a series of Napoleonic blunders and misfortunes. Nick Lipscombe, an eminent Napoleonic historian, will examine the strategic backdrop to this monumental clash of arms and then outline the tactical details of the battle itself before drawing conclusions for and against this assertion.

**Maps & Surveys 2017 - DSA Seminar at the Arlington Arts Centre, Newbury, 24 June 2017**

**Surveying Egypt & Palestine 1916-1918 – 7 Field Survey Company RE.**

By Dr. Peter Collier, DSA

The fighting in Egypt and Palestine created new challenges for those who were responsible for providing mapping. The existing mapping did not meet the needs of large scale military operations. This led to the first serious attempt to create mapping almost exclusively from aerial photography. The presentation will discuss the challenges faced and the methods used to overcome those challenges.

**The Normandy Landing, Freedom of Europe and an Army Survey Career, as it used to be, in and out of Military Survey.**

By Allan Marles DSA.

Personal experiences of the Second World War including the Normandy Landings, the liberation of France, Belgium, Holland and the defeat of Germany. The post war years, land surveys in the Colonies and elsewhere. "In the Army but seldom serving with it".

**The Road Past Mandalay.**

By Gavin Edgerley-Harris, Curator Gurkha Museum.

In 1942, the seemingly invincible Japanese Imperial Army swept the ill-prepared British and Indian Army troops out of Burma. Following new tactics, new reinforcements and epic battles in the Arakan and around Imphal and Kohima in 1944, "Bill" Slim and his XIVth Army achieved his "Master Stroke", broke the Japanese stronghold on Burma and drove them back through Burma. The talk concentrates on the Gurkha battalions involved and personal stories of some who served.

**HMSML Gleaner – Hydrographic Surveying for the new Aircraft Carriers.**

By Lt Cdr Marc Taylor RN, Commanding Officer HMSML Gleaner.

Her Majesty's Survey Motor Launch Gleaner and her surveys of the River Forth and Portsmouth Harbour in preparation for the departure and subsequent arrival of HMS Queen Elizabeth and HMS Prince of Wales. In between the two surveys in Fife and Hampshire, HMSML Gleaner has also spent time in the Channel Islands providing assurance surveys for navigation training in this region. This is HMSML Gleaner's final year in Service before decommissioning in Dec 2017 and will cast reflection over her 34 years of Service.

**Mortar Baseplate Analysis brought up to date**

By Chris Barrington Brown. Late Regular, now part-time Gunner, and also Managing Director of "Cunning Running Software Ltd."

A GeoTech in every policeman's pocket: How geo-analysis is helping police (and the military) protect us. Advances in computer technology now allow non-specialists to carry out geo-based analysis that previously required a trained geo-technician. Cunning Running Software Ltd, a small organisation of mostly ex-military personnel, produces software which allows police and military to swiftly deduce likely terrorist attack points, helps to define and manage mitigation plans, and provides briefing and situational awareness tools in areas where specialised geo-support is not available.

**DSA AGM, Lecture and Dinner 2018.**

**STALIN'S ENGLISHMAN.**

By Andrew Laurie.  
Guy Burgess, his life etc.

**Maps & Surveys 2018 - DSA Seminar at the Arlington Arts Centre, Newbury, 8 June 2018**

**MOUNTAIN, MULES AND MALARIA – SOLDIERING WITH THE BRITISH SALONIKA FORCE 1915-18.**

By Alan Wakefield, Imperial War Museum.

Key aspects of the British Soldiers' experience in the Macedonian Campaign.

**WW1 100<sup>th</sup> ANNIVERSARY SLIDESHOW & MAP DISPLAY – SURVEY IN MACEDONIA 1916-1918.**

In January 1916 the Maps & Survey and Printing Sections R.E. moved from Gallipoli to Salonika and expanded to become 8 Fd Svy Coy R.E. under the command of Maj. H.Wood R.E. From a measured base and a triangulation the British sector was mapped at 1:20,000 and 1:50,000 scales by both plane-tableing and the use of air photos. A powerpoint slide show will run continually during the breaks to supplement the talk by Alan Wakefield and samples of campaign maps will be on display.

**HAIG: BRITAIN'S GREATEST COMMANDER IN CHIEF.**

By Peter Hart, Imperial War Museum

An examination of the career of Douglas Haig, covering his pre-war achievements and his performance as both a corps and army commander, 1914-1915. The main focus though will be on his superb performance as commander of the BEF, 1916-1918, defining his approach to his multifarious responsibilities, the difficulty in combatting the ever-mutating defensive tactics of the German Army and examining his ultimate success in creating the culture where the 'All Arms Battle' would emerge to eventually win the war.

**ICEEX.**

**By, Lt Jon Edmonds R.N., Contingent Forecaster, Joint Operational Meteorology & Oceanography Centre, Northwood H.Q.**

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**Gunner Survey, Current and Future.**

By WO2 SMIG Matthews R.A., Royal School of Artillery, Larkhill.

The presentation will include a brief history of survey within the RA and current operational procedures which will demonstrate how we can operate in a GPS-denied environment. Concluding with future intent and vision of where RA survey is progressing.

**The Future of the Ordnance Survey – Heritage or Holograms – Rambling or Robots?**

By John Kedar, Ordnance Survey International Engagement, Southampton.

For over 200 years O.S. has been responsible for describing the man-made and natural landscape of Britain. How will this change as we enter a world where machines create and consume data at a detail, scale and velocity that is unparalleled? Does the nation need a mapping agency, or will we all make our own maps as we go?

**Geo Support to Medical Outreach Activity on Ex Askari Serpent by HQ 1 (UK) Division Geo Section.**

By Sgt Damian Lloyd R.E. & L Cpl James Smith R.E., HQ 1 Division.

The 1 (UK) Division Geo cell has supported Ex ASKARI SERPENT, a Medical Regiment health outreach exercise in Kenya,

providing a coherent patient data collection and geo analysis process based on open source geospatial tools for use by the UK and Kenyan participants. The project aims to provide geospatial analysis of health-related issues and trends, allowing better targeting of health resources in the areas visited. The processes and applications used have military wider applicability, particularly in UK Defence Engagement activities, often in areas where UK Defence mapping is sparse or lacks currency.”

**Static Display of in-service Geo GPS and Lidar Equipments.**

WO2 Ollie Teesdale R.E. & Sgt Warren Slade R.E., 42 Geo Regt, RAF Wyton.

**DSA AGM, Lecture and Dinner 2018.**

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By Prof. Gary Sheffield.

**Maps & Surveys Mini-Seminar at The Gurkha Museum, Winchester, 7 Nov 2018.**

**William Lawrence Bragg & Sound-Ranging in World War One.**

By Professor Robin Marshall, Manchester University.

“William Lawrence Bragg, the youngest ever winner of the Nobel Prize for physics in 1915 is forever associated with Sound Ranging in World War I. After the war, he was appointed Professor of Physics in Manchester where he remained until 1937. A file of his correspondence between Bragg and various Sound-Rangers dating from 1915-1919, misfiled inside a file of lesser importance has recently come to light.

The names of the correspondents in the letters read like a roll of honour of sound ranging and surveying:

Tucker, Lucien Bull, Winterbotham, Jack, Marsden, Gott, Bazzoni, Russell, Gray, to mention a few. They form the heart and soul of a book which was published in September 2018 and also this seminar talk. They illustrate every human mental state that the war enhanced: professionalism, stoicism, numbness, determination, impatience, realism and the ecstasy of the 1918 autumn chase that drove the German Army out of France and Belgium.”

**Flash, Sound and Print in the American Expeditionary Force 1917-1919.**

By Mike Nolan, DSA.

Americans generally join our wars late but when they do they learn quickly from experience learned the hard way by us and generally “save our bacon”. This will be a light-hearted look at the work of the 29<sup>th</sup> Engineers U.S. Army who were based at Langres, near Chaumont, in the Champagne-Marne and will be illustrated by numerous images from American archives including cartographic and printing plant, the first field mobile print train and results of flash-spotting and sound-ranging.

**Commonwealth Surveyors and Map Makers at the Battles for Alamein in Second World War**

By Dr. John Peaty, Defence Geographic Centre.

This presentation will examine the work of Commonwealth surveyors and mapmakers for the battles of First Alamein, Alam Halfa and Second Alamein in the Western Desert of Egypt, July to November 1942. In particular, it will examine going maps (especially a false one which is claimed to have deceived Rommel during Alam Halfa), block-plots (which aided counter-battery fire before and during Second Alamein) and aerial photography for survey (about which the air force and army disagreed and over which Montgomery, Coningham, Tedder and Alexander fell out in the aftermath

**Going Beyond The Map.**

By James Prain, DSTL.

James outlined how the business of Geospatial Intelligence might evolve in the next decade. The themes were 1. People and Place. A rich understanding of both the physical environment and the human dimension. 2. Personalised information. In future, users will interact with data in new ways including speaking to the computer, visualizing the information through holograms and immersive technologies such as virtual reality. Furthermore, users will receive filtered information based on role, mission and location reducing “information overload”. 3. Models. Information will be drawn from a variety of sources including predictions for dynamic data such as weather, tides and crop growth. 4. Capture and Conflate. Data will be acquired from a large range of new sensors carried by drones and micro-satellites. Sensors will be part of the “Internet of Things” and underpin the concept of “Smart Cities”. These sources will be both Official and Unofficial and data sets will have to be merged through a process known as conflation. 5. Defence as a platform. In future the computing processing and application hosting environment will be standardized across the whole Defence enterprise and Geo specialists will no longer be required to operate using their own bespoke IT systems. Also discussed was the need to model the complex urban environment with its associated littoral zone where most of the World’s population lives and the need for users to get used to handling and visualizing uncertainty

**Maps & Surveys 2019 - DSA Seminar at the Arlington Arts Centre, Newbury 28 June 2019.**