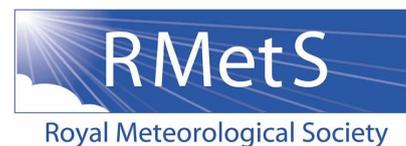


HISTORY GROUP NEWSLETTER



News, views and a miscellany published by the Royal Meteorological Society's
Special Interest Group for the History of Meteorology and Physical Oceanography

Issue No.2, 2014

INTRODUCTION

from Malcolm Walker, History Group Chairman

I am sorry this issue of the newsletter is a month or so late. Thank you for being patient. I had to get my book about the organs and organists of Exeter Cathedral to the publisher by the end of July.

Thank you also to those who have contributed articles to this newsletter. Please keep fingers on word processor (or typewriter) keys and send me articles for the autumn 2014 newsletter. The deadline is 15 October.

This newsletter acknowledges a number of anniversaries: 75 years since the outbreak of the Second World War, 70 years since D-Day and, of course, 100 years since the Great War began. You will see that the newsletter also contains items from 150 and 175 years ago, as well as something from 1877. The latter has been included because it shows that wet weather in winter comparable with that which occurred over many parts of the British Isles in 2013-2014 has happened before. Note that railway officials thought trains could be driven safely through three feet of water! Note also that postmen waded through water waist-deep.

FORTHCOMING MEETING

HISTORY OF THE GREENHOUSE EFFECT

Wednesday 15 October 2014, 2.00 to 5.00pm
Imperial College, South Kensington, London

A National Meeting of the Royal Meteorological Society organized by the History Group.

This 'Classic Papers' meeting marks the 50th anniversary of the death of Guy Callendar, one of the pioneers of greenhouse effect studies. The meeting will bring out the significance of his work and also focus upon other papers which have contributed fundamentally to the development of this exciting

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and very topical subject. Different angles will be covered – particularly radiation forcing, climate models and laboratory models – and the meeting will include a lecture by John Harries, winner of the Society's Mason Medal for 2013. He will give the Mason Lecture on observations of Earth's greenhouse effect from space.

SPEAKERS

Ed Hawkins (University of Reading)

A brief history of climate science: from Fourier to Callendar

Dr Hawkins will discuss the first studies on climate science, starting with Fourier, and including Tyndall, Arrhenius and Callendar.

Keith Shine (University of Reading)

The dawn of modern climate modelling – early one-dimensional studies

The pioneering one-dimensional radiative-convective models of Manabe and his colleagues in the 1960s, and related studies during the 1970s, firmly established many of the fundamental theoretical understandings of how carbon dioxide causes climate change – and much else besides! They are remarkable in how they have withstood the test of time, and even now can act as a source of inspiration.

John Mitchell (Met Office)

The dawn of modern climate modelling – early three-dimensional studies

Manabe and Wetherald performed the first three dimensional climate change modelling experiments in the mid-1970s. Their analysis of their results is an exemplary example of how to use models to understand the physical basis of climate and climate change, and their main findings still are valid almost forty years on.

Clive Rodgers (University of Oxford)

Calculating radiation, with and without computers

Dr Rodgers will talk about methods of calculating radiative transfer, starting with radiation charts and describing the various approximations that were used – and then dropped as computers became more capable.

John Harries (Imperial College)

Observations of the Earth's greenhouse effect from space

The radiative energy balance of the Earth has been studied for some years now, with ever increasing sensitivity and accuracy, and now we know a lot about the spectrum of infra-red radiation that cools the Earth to space. The talk will describe some key observations using American, European and Japanese spacecraft, and efforts to use changes in the IR spectrum to monitor climate change. Other work has sought to make sense of how the integrated long-wave and short-wave energy fluxes vary with time. We will also touch on the nature of the energy balance of the planet: if the energy balance is de-stabilized, e.g. by a volcanic eruption, how long does it take to restore equilibrium?

**Darwin and FitzRoy play
written by Juliet Aykroyd**

Monday 8 to Saturday 13 September 2014, 7.30pm

Progress Theatre, The Mount, Christchurch Road, Reading, RG1 5HL

Tickets from the theatre. Telephone 0118 384 2195. Adults £10. Concessions (over 60) £8.

<http://www.progresstheatre.co.uk/whats-on/darwin-and-fitzroy>

In association with the Festival of Weather, Art and Music, each performance of **Darwin and FitzRoy** will be preceded by a special talk or musical event. One was the father of evolution; the other the father of meteorology. Both men changed the world – but while one man is revered, the other is forgotten.

Set during the voyage of the Beagle and in later years, **Darwin and FitzRoy** plots the friendship and tension between Charles Darwin and Robert FitzRoy. Both men of science and men of faith, Juliet Aykroyd's witty and poignant play charts the relationship between two giants of modern science on their celebrated voyage around the world, and catalogues the demons besetting both.

Every performance of this play will be preceded by an event exploring FitzRoy's life, life scientific under sail, the music inspired by the sea and the use of old ships' logs in modern climate research.

Accompanying the play and the events will be an exhibition of weather-inspired art by two Reading artists, Julia Rogers and Roxana Tohaneanu-Shields.

Monday 8th – Gordon Tripp
Admiral FitzRoy, Founder of the Met Office

Tuesday 9th – Professor Tony Rice
Science at sea and under sail

Wednesday 10th
Pierrette Thomet and Gerard Cousins
Sea Fever – voice and guitar

Thursday 11th – Dr Philip Brohan
oldWeather – New Science

Friday 12th – Professor Brian Golding
Faith and Science

Saturday 13th
Pierrette Thomet and Gerard Cousins
Sea Fever Gala Night

THE HISTORY OF WEATHER SHIPS

National Meeting of the Royal Meteorological Society organized by the History Group, held on Saturday 22 March 2014.

A meeting on weather ships in a place as far from the sea as Birmingham may seem a little perverse. However, the meeting attracted 51 people, and the room that was used for it, in the Geography Department of the University of Birmingham, was bursting at the seams. A dozen or more of those who attended had served on weather ships, and some brought along exhibits.

The first talk was given by **Malcolm Walker**, whose topic was *Mid-Atlantic observatories: an idea before its time*. He began by saying that the electric telegraph had first been used in the 1860s to collect real-time weather reports from ships that were far from land. A vessel which had telegraphic connection with the mainland had been placed fifty miles south of the Lizard to serve as a 'call station' for merchantmen entering the English Channel, but the connection had broken frequently, so the scheme had had to be abandoned. The 'Sunk' light-ship had in 1884 been connected to the Post Office at Walton-on-the-Naze nine miles away, but, again, the cable had broken all too often. Nevertheless, the idea of collecting weather reports from ships that were far from land was revived in 1885, when it was proposed that a Floating Telegraph Ship be moored in mid-Atlantic near 50°N 20°W, in the usual track of depressions which approach the British Isles. The plan was that the ships would carry recording meteorological instruments and be connected to a trans-Atlantic cable. However, neither Britain's Meteorological Office nor anyone else showed any interest in the idea. Perhaps the cost was considered prohibitive. By 1910, much use was being made of wireless telegraphy to obtain near-real-time weather reports from Atlantic liners, but there were no truly ocean weather stations before 1938, when a French weather ship, *Carimaré*, was stationed 800 miles west of the Azores for the benefit of North Atlantic flights. The ship carried ten French meteorologists who, in addition to making observations of weather and sea conditions, released pilot balloons and radio-meteorographs daily to obtain upper-air information. *Carimaré* was withdrawn when the Second World War broke out.

The next speaker was **Brian Booth**, whose talk was called *None but the brave – the men of the British wartime weather ships*. His was a fascinating but sad story, of two ships, *SS Arakaka* and *SS Toronto City*, which for several months from late 1940 provided weather observations of vital importance from a part of the mid-Atlantic that was a data desert but were then sunk by U-boats. Prominent in his story were the meteorologists Sidney Portass and Stanley Proud, who both perished when the ships were torpedoed. Brian's story was full of graphic details, with illustrations to show horrendous sea conditions and occasional superstructure icing, but he did not illustrate the conditions in the ships' galleys which would not have impressed today's health and safety inspectors! For further information about wartime weather ships, see Brian's article on page 9.

Next to speak was **Oliver Ashford**, who had been present at the naming of the UK's first ocean weather ship in July 1947 and a year later spent time aboard *Weather Recorder* on the North Atlantic. For the voyage, he had been provided with a Bell & Howell 16mm cine-camera and used it to film life and operations aboard and near the weather ship. There was footage of waves (lots of them!) and there were views of various instruments, radiosonde launches, air-sea rescue training and men climbing up rope ladders from lifeboats. The film had been converted to DVD format for the meeting. There was no sound with the film, but Oliver supplied a most interesting and humorous commentary himself. A few weeks after the meeting, Oliver recorded a commentary, which has been added to the DVD by the Royal Meteorological Society's IT Manager.

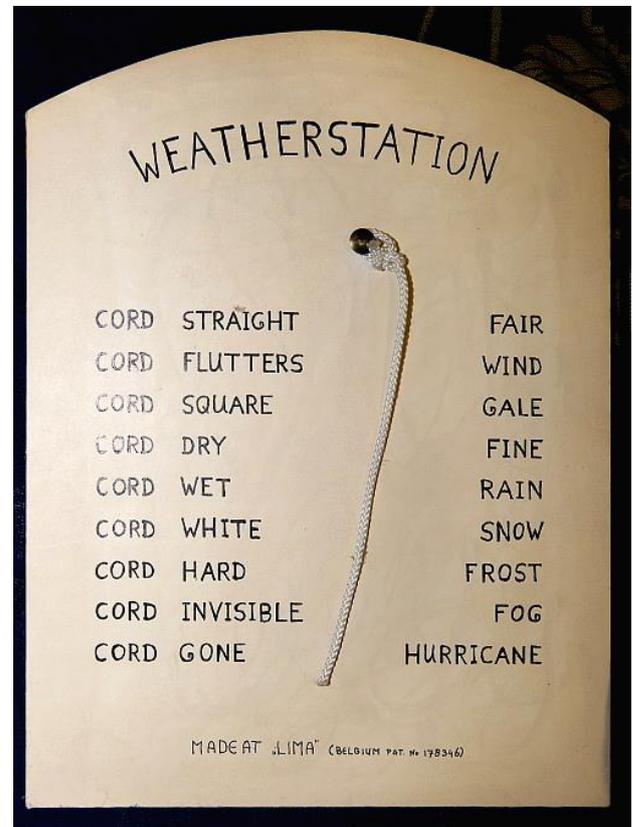


Those with ocean weather ship service. Oliver Ashford fourth from the left. David Axford second from the right. Norman Lynagh sixth from the right.

The next speaker was the organizer of the meeting, **Alan Heasman**, whose talk was called *Commander Frankcom: the father of the UK Ocean Weather Ship network from the 1940s to the 1960s*. He showed a 'Look at Life' documentary of life aboard *Weather Adviser* in 1965 and spoke about the career of Commander Frankcom, who had been born in 1903, served as an officer in the Merchant Navy in the 1920s and 1930s, joined the Board of Trade as nautical surveyor and examiner of Master and Mates in 1936, and appointed Marine Superintendent of the Meteorological Office in 1939. He had also undertaken Royal Naval Reserve training in submarines in 1936. He had volunteered for naval service during the Second World War and rejoined the Meteorological Office in 1945 when demobbed. After the war, as Alan explained, Frankcom was faced with the task of reorganizing the UK's Voluntary Fleet of observing ships, which had been decimated during the war, and with tackling a new task, that of organizing the UK's contribution to the Ocean Weather Ship network. Alan went on to describe the work of the ocean weather ships and also summarized Frankcom's post-war career, mentioning his membership of learned societies and professional bodies and his involvement in World Meteorological Organization activities, notably the Maritime Meteorology Commission. In his personal recollections of Frankcom, Alan recalled the "robust 'theatrical' voice", "the shock of silver hair", "the impressive 'mutton chop' sideburns", and "the elegant suit, calf-skin gloves, bowler hat and silver-top cane for London meetings".

After Alan came **Norman Lynagh**, with a talk called *Marine weather observations – fact or fiction*, which focused upon the reliability of weather observations from ships. He stressed that these observations were extremely important for providing information about weather and sea conditions but pointed out that a ship at sea was not a stable platform. There were many difficulties in making meteorological observations accurately (surface and upper air), so such observations needed to be treated with caution. He considered the question of how to measure wave and swell heights and periods, especially at night, and how to estimate the speeds of surface wind speeds. He also considered the various means of measuring sea-surface temperature – canvas bucket, engine-room intake, thermistor, modern satellite observations – and questioned what exactly was meant by 'sea-surface temperature', especially when the surface layer of

the sea was being stirred by breaking waves. Moreover, thermometers can become encrusted with salt, and wind forcing can cause surges of barometric pressure. And how does one measure visibility at sea? Probably, he concluded, the best we can say is that weather ships have left a legacy of observations which are useful best estimates.



Marine weather observations – fact or fiction?!

The final speaker was **David Axford**, whose topic was *The closing years of the North Atlantic Stations Board (1982-1990) – a UK weather ship for a peppercorn £1*. At the start of his talk, he said that his job in the Met Office in the late 1970s had been to develop ocean buoys to improve data coverage over and above that provided by weather ships. He went on to review the history of the weather ship network on the North Atlantic Ocean, from the North Atlantic Observing System (NAOS) agreement of 1954, which provided for nine ocean stations manned by 24 ships, to the withdrawal of the last ocean weather ship from the North Atlantic in 2010. Closure of stations had begun in earnest in the middle of the 1970s, reflecting changes in types and routes of aircraft. Stations I and J had been replaced by one new station, LIMA, at 57°N20°W, in 1975, leaving only four ocean weather stations. There had also been changes in telecommunications in the 1970s and 1980s, with digital transmission replacing Morse in the early 1980s, as well as changes in

instrumentation, with increasing reliance on buoys. David mentioned that from 1982 to 1984, as a Deputy Director of the Met Office, he had attended meetings of the NAOS Board with Met Office marine superintendents G.A.White and G.V.Mackie, after which, until 1989, as the Met Office's Director of Services, he had been President of the NAOS Board. In 1982, weather ships *Admiral FitzRoy* and *Admiral Beaufort* had been scrapped and the weather ship base at Greenock closed. In 1985, the Met Office had purchased *Cumulus* from the Dutch for a nominal £1, and he showed photographs of the handing-over ceremony. The converted trawler *Starella*, which had been hired as an ocean weather ship in 1982 and operated out of Fleetwood, was scrapped in 1989. David explained that the NAOS Agreement ended in November 1989 and ocean weather station support ceased at the end of 1990. However, some ocean weather stations were maintained thereafter, with *Cumulus* making its last upper-air observation on 28 May 1996 and its last surface observation the following day. After *Polaris* ceased to man Station MIKE at 66°N 02°E in 2010, there were no more ocean weather stations on the North Atlantic. Today there are only buoys.

The meeting was a great success. Many thanks to Alan Heasman for arranging it.

HISTORY OF WEATHER SHIPS MEETING Exhibits ▼



100 YEARS AGO

The Great War began in 1914. The following was written by Malcolm Walker and has been taken from his *History of the Meteorological Office*, (Cambridge University Press, 2012).

The Great War brought to an end the old order for meteorologists and almost everyone else. Meteorology had for decades advanced at a fairly leisurely pace. Friendships, cooperation and collaboration between meteorologists and meteorological institutions had developed. In 1914, the priorities and purposes of research and operations changed abruptly, and official relations between institutions changed too. Research did continue in neutral countries, but the amount of international cooperation and collaboration that was possible was relatively small. The activities of the International Meteorological Organization were suspended when the war began.

Some military techniques were age-old. Smoke-screens were utilized on land and at sea. Appropriate forecasts of winds were therefore required. Mud had long been a hindrance for foot soldiers and cavalry and proved to be a major problem in the trenches of the Great War. Weather forecasts were needed. Amusingly, the official attitude of the Army at the beginning of the war was that British soldiers did not go into action carrying umbrellas!¹ But this attitude was soon to change, and a Meteorological Section of the Army was formed in the summer of 1915, its *raison d'être* being to provide information to the Royal Flying Corps, which had not been taking meteorological information sufficiently seriously. Advances in aeronautical meteorology before the war had been such that many aviators now considered aeroplanes could fly in any weather, rendering forecasts superfluous! Moreover, some aviators argued that in wartime flights had to be made in spite of the weather. Fortunately, these attitudes of aviators changed quickly as the war developed, and the crucial importance of cloud and fog forecasts and the need for reliable information about upper winds soon became apparent. Zeppelin bombing raids on towns in eastern England in the spring of 1915 further showed the relevance of meteorology. The target of the airships was London but the wind had taken them far to the north-east of the capital.

¹ See 'Some notes on meteorology in war time', by C J P Cave, published in the *Quarterly Journal of the Royal Meteorological Society* in 1921 (Vol.48, pp.7-10).

Successful deployment of observation balloons called for information about upper winds, too. Moreover, the need to know temperature, humidity, wind speed and wind direction in the upper air came to be appreciated in respect of artillery needs, for the accuracy of gunfire depended on winds and air density in the layer of the atmosphere through which shells travelled. With the high-angle fire that developed during the Great War, knowledge of the atmosphere to ever greater heights was needed. And the war brought a new reason for understanding air motions in the atmospheric boundary layer. Poison gas was used. For aviators, there was a particular need to forecast thunderstorms, which for them were dangerous weather formations. These storms produced lightning and hail and contained inside their towering cloud systems strong upcurrents and downdraughts. They were also accompanied by vigorous gusts and downbursts near the ground.

The Great War brought new challenges for the staff of the Meteorological Office. There were changed or new priorities in the workplace. Staff were called up and served abroad in uniform. Some sadly died on active service. The trained scientist Napier Shaw had gathered around him brought great credit to the Office through their capabilities and expertise, and the process of recruiting trained scientists continued during the war. Some were to serve the Office with distinction for many years after the war ended. Many of the men who were called up were replaced by women, and the pre-war employment conditions for women were relaxed somewhat. When Miss Dorothy Chambers, then aged 20, was interviewed by Shaw in the autumn of 1913 for a post as a shorthand typist, there were two requirements other than ability to type: she had to be the daughter of a professional man; and she must not wear a low-cut neckline!²

The first meeting of the Meteorological Committee during the war took place on 28 October 1914. Some of the business was as mundane as ever. For example, the Meteorological Office wished to establish a service whereby weather forecasts would be distributed by telephone, but the Postmaster General regretted that he could not see his way to assisting in a scheme of the kind suggested, "on the grounds of the accounting work involved and the need for observance of special instructions in the various telephone exchanges". The Post Office and

² Miss Chambers remained with the Meteorological Office for forty years, retiring in 1954.

the Meteorological Office were sharing a building (in South Kensington) but did not seem able to coexist in complete harmony. There was, however, much in the committee's minutes that was war-related, and Minute 478 was headed 'Emergency action during the war'.

The minute in question began with a report that the Office's wireless telegraphy sets at Kew and South Kensington had been removed by order of the Postmaster-General on the day war was declared, 4 August. This was followed by the information that a demand had been received by telegram the same day "to make up the establishment of meteorological instruments at Devonport". The instruments had duly been despatched and the establishments at all other dockyards also made up. Instruments had been lost when ships had been sunk by enemy action; and a theodolite Ernest Gold had taken with him when he went to a meeting of the British Association in Australia had been left with the chief officer of the ship, the *Euripides*, on which he had made the outward voyage, to be brought back to England on the return voyage. However, the ship had since been requisitioned by the Admiralty as a transport and the instrument was presumably still on board. He had taken the theodolite with him to track the pilot balloons he launched from the ship.

The Meteorological Committee minutes show that telegrams were being censored, with use of the address 'Weather London' banned when censorship began. As a consequence, the flow of weather reports from foreign countries had almost ceased, but reports from the Azores and Madeira had been received in plain language. However, use of 'Weather London' had soon been allowed again, as a result of which the flow of reports had recommenced from all countries except Germany, Belgium and Iceland. Reports from the Atlantic by wireless telegraphy had practically ceased by October 1914.

No meteorological reports were being sent from Britain to foreign countries, but representations asking for restitution of the service had been received from Sweden, Denmark and Holland, and a request for a new service had come from Russia. Reports had been sent in plain language to France from 14 August to 20 October, Brussels from 14 August until the occupation of that city and Antwerp from 7 September until 11 October. The reports to France had ceased because they had been

made public in the *Paris Bulletin* and broadcast from the radio station on the Eiffel Tower.

Issue of the *Daily Weather Report* had been unaffected at first, apart from a number of modifications that had seemed desirable. After a meeting between Napier Shaw and the Secretary of the Admiralty on 1 October, however, the Meteorological Committee decided to discontinue the daily issue of lithographed copies of the *Daily Weather Report* to all but certain official addresses, which included the War Room at the Admiralty. Enciphered weather maps and forecasts were being supplied morning and evening to the Naval Air Service, prepared for transmission by radio.

The minutes contain the names of twelve members of staff who had applied for leave to join the Forces. Five had been given permission to enlist and two refused, one on health grounds, the other on account of eyesight. Instructions were awaited for the others. In addition, the minutes state that the Eskdalemuir Superintendent, L F Richardson, a Quaker, had repeatedly asked leave to join a Red Cross unit or the ambulance corps but permission had so far been declined.

© Malcolm Walker, 2012.

UNDER-REPORTING OF TORNADOES

If you can help with the following query, please contact Dr Bogdan Antonescu, AXA Postdoctoral Research Associate, Centre for Atmospheric Science, School of Earth, Atmospheric and Environmental Sciences, University of Manchester, Simon Building, Oxford Road, Manchester M13 9PL, UK (bogdan.antonescu@manchester.ac.uk)

"Together with my colleague Kelsey Mulder from the Centre for Atmospheric Science, I am working on a paper on tornadoes in Europe. One of the major problems that we have encountered when analyzing the data is the low number of tornado reports for Eastern Europe between 1945 and 1990. We know that for some East European countries (e.g., Romania, Czech Republic) during the socialist period the term 'tornado' was forbidden from the official reports, producing a view that tornadoes do not occur in Eastern Europe. We are wondering about the historical reason behind this and other under-reporting issues."

RECORDING THE WIND, PART TWO by Howard Oliver

In our last newsletter, I outlined an example of one of the earliest forms of recording anemograph. This model used the familiar three-cup anemometer design, but there were at the time other wind speed recording systems which used rotors or pressure plates which are described below to complete the account.

An example of a rotor system was Whewell's Anemometer, which is well described in John Drew's 1855 book *Practical Meteorology* pp 269-71 as illustrated in Figure 1. The system was designed by the Revd. Dr Whewell, Master of Trinity College, Cambridge, and was employed at Greenwich to determine daily runs of wind.

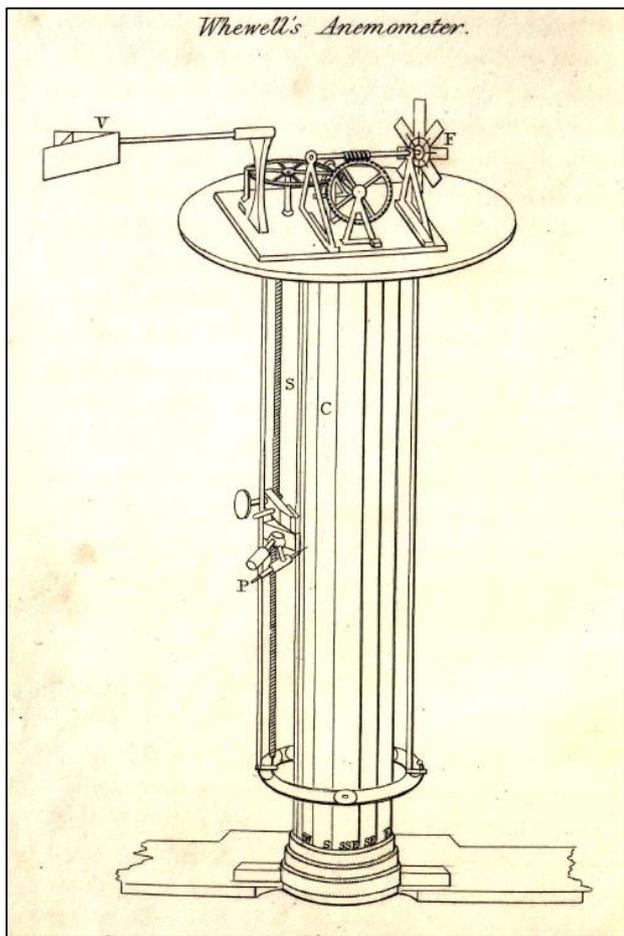


Figure 1

The vane turns the equipment on the top of the recording cylinder into the wind and the rotation of the rotor turns the geared 15" vertical screw which carries a pencil. This then descends such that a vertical movement of 1" is equivalent to a run of wind of 37.9 miles.

An even more ingenious device of the time was Osler's Anemometer, which automatically recorded not only the pressure and direction of the wind but also rainfall! This is described in Drew pp 263-269 and in *Symons's Monthly Meteorological Magazine* XXII (November 1867), pp 110-13.

At the base of the system is a clock-powered paper chart that moves at a steady fixed rate. The movement of the wedge-shaped vane is transferred by the hollow vertical spindle to a geared horizontal rack that moves the recording pencil (1) across the paper. The movement of the pressure plate (T) against the springs behind it is transferred by means of a pulley and wire down through the centre of the hollow spindle to spring lever (v) and pencil (2). Rain from the funnel eventually operates a tipping bucket system and causes the recording pencil (3) to step across the chart.

The whole equipment, as illustrated by Drew, is shown in Figure 2, together with an example of the three recorded traces for wind direction, force of the wind (which could be subsequently converted to an approximate wind speed) and rainfall.

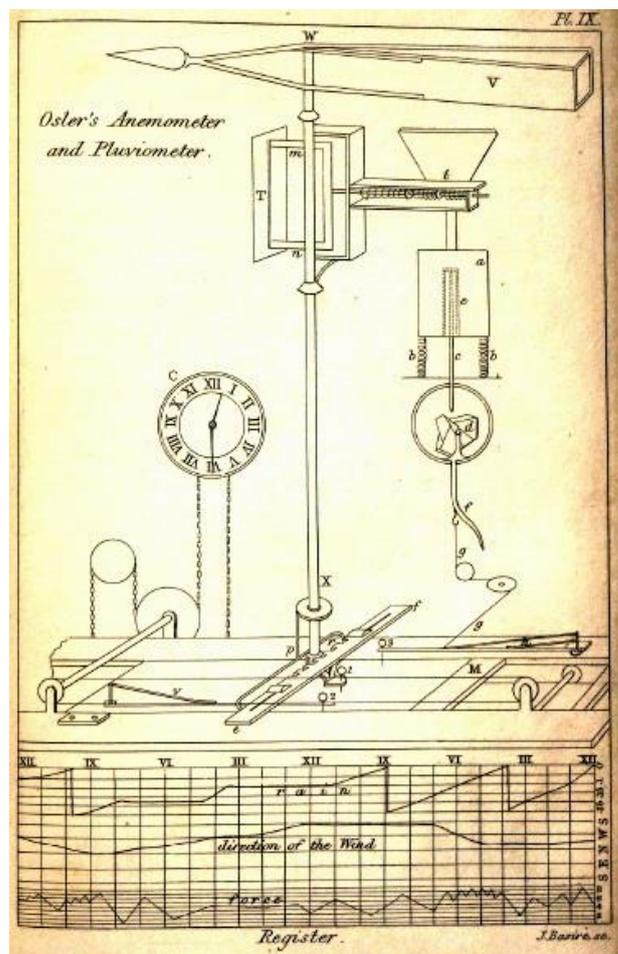


Figure 2

The development of the North Atlantic Ocean Weather Ship network during the Second World War

by Brian J Booth

When the United States deployed two United States Coast Guard (USCG) cutters as plane-guard stations (beacons/weather ships) along the Pan American Airways clipper route from Bermuda to the Azores in February 1940, it could not have foreseen it was laying the foundation of the post-war Ocean Weather Ship network (Figure 1).

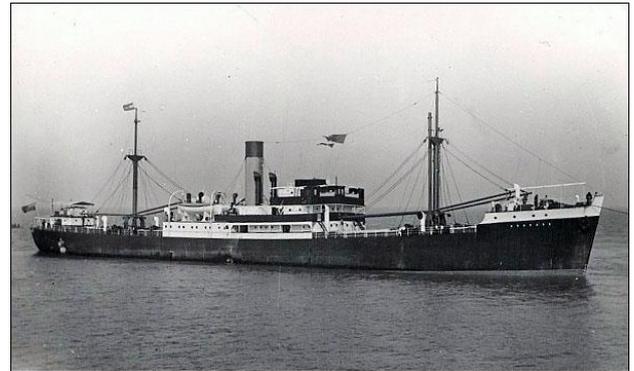


Figure 2. SS Arakaka at Liverpool between 1934 and 1939.

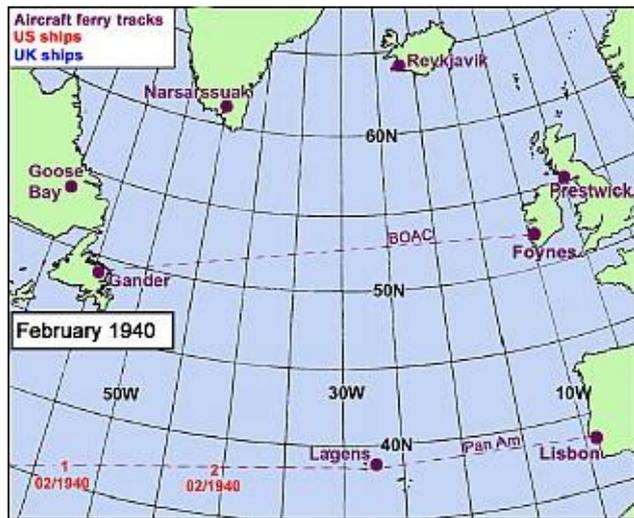


Figure 1. Positions of the USCG cutters deployed for for weather reporting duties during February 1941.

In August 1940 the British Admiralty chartered two steamers, the SS Arakaka and SS Toronto City (Figures 2 and 3), for deployment on weather reporting duties in mid-Atlantic (Figure 4). The SS Arakaka sailed first and transmitted its first reports on 22 September. Their reports were of considerable value for forecasters covering the BOAC route between Foynes and Botwood (near Gander) and the Atlantic Ferry Organization (later Ferry Command) route between Newfoundland Airport (later Gander) and Prestwick.

Both ships were sunk by U-boats nine months after starting operations, the SS Arakaka on 22 June 1941 by U-77, and the SS Toronto City on 1 July by U-108.

The United States developed air routes between Canada and the United Kingdom after it was drawn into the conflict with Germany in December 1941. During the summer of 1942, three plane-guard stations (weather ships and beacons) were established along routes flown by aircraft being ferried to the United Kingdom (Figure 5).



Figure 3. The SS Toronto City leaving Bristol Docks on 4 July 1937. (© Bristol Maritime Museum)

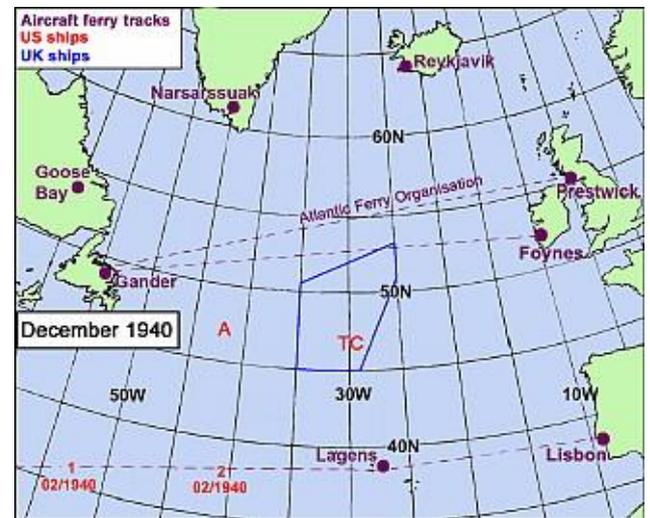


Figure 4. The SS Arakaka (A) and SS Toronto City (TC) patrolled within the blue lines. 'A' and 'TC' mark the positions at which they were lost.

One of the ships deployed to the station about 500 miles northeast from Newfoundland, the USS Muskeget (Figure 6) was torpedoed by U-755 on 9 September 1942.

Figures 5 and 6 on next page

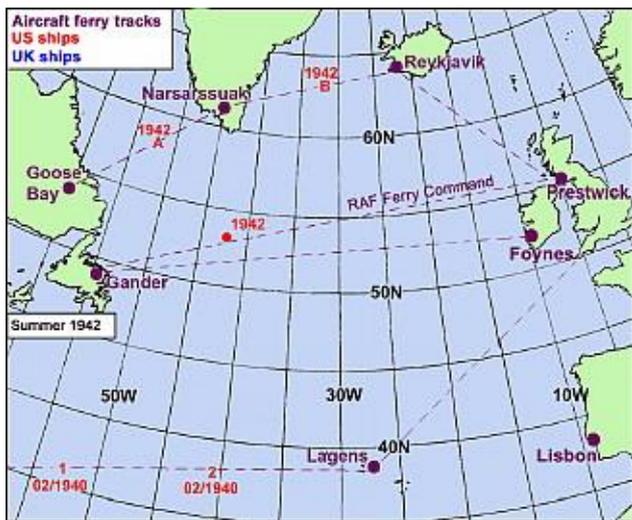


Figure 5. The United States increased its number of weather ships during the summer of 1942.

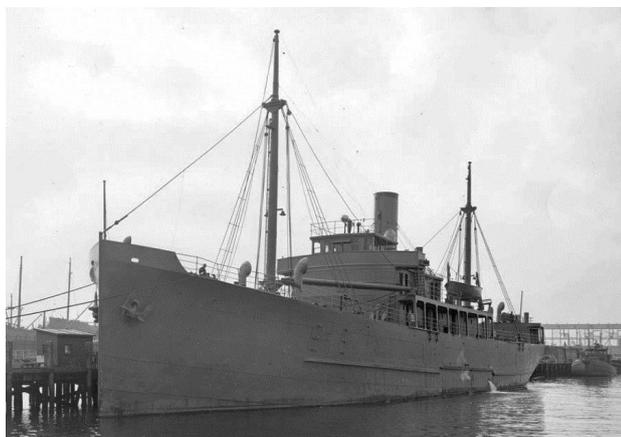


Figure 6. The USS Muskeget at Brooklyn on 30 March 1942; seen in civilian configuration while waiting for conversion for weather reporting duties.

(© Robert Hurst)

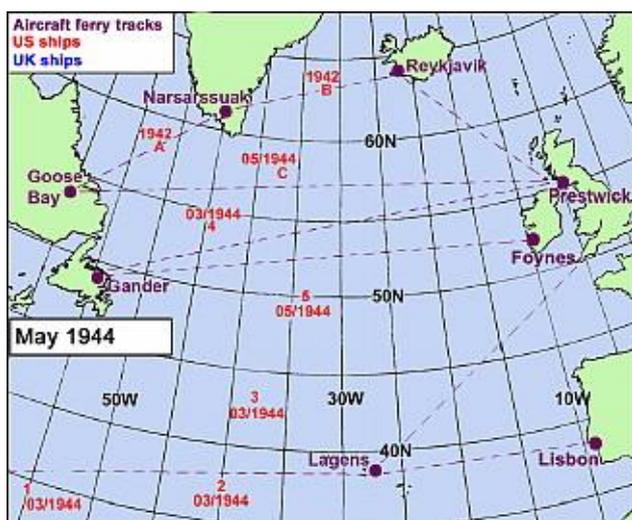


Figure 7. United States weather ship network by the end of May 1944.

Between March and May 1944 the United States established another plane-guard station and two weather ships, so completing a comprehensive network of weather stations over the West Atlantic (Figure 7).

On 25 May the Admiralty deployed two frigates, *HMS Hoste* (Figure 8) and *HMS Grindall* (Figure 9) on weather reporting duties west of Ireland with specific orders to avoid contact with all enemy shipping. Whereas the American ships remained within 100 miles of a fixed point, the frigates' patrols were wide-ranging (Figure 10).

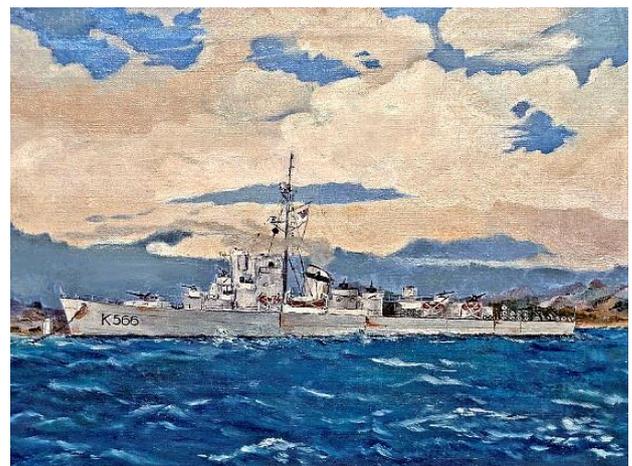


Figure 8: A painting of *HMS Hoste* by Commander Frank Greenaway, RNR; circa July 1945.

(© Jeremy Greenaway)



Figure 9: *HMS Grindall*

The two ships were withdrawn about a month later, and replaced by a single ship reporting from near 50°N 20°W. A second ship was similarly deployed at 58°N 20°W during December 1944 (Figure 11).

Figures 10 and 11 on next page

During the four years the positions of some of the American weather stations changed slightly, and during 1944 the positions were all known by numbers rather than a mix of numbers and letters.

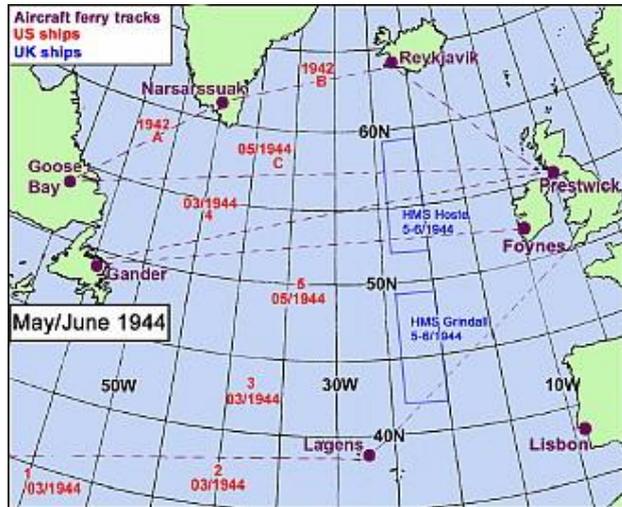


Figure 10. Weather ship network on D-Day, 6 June 1944.

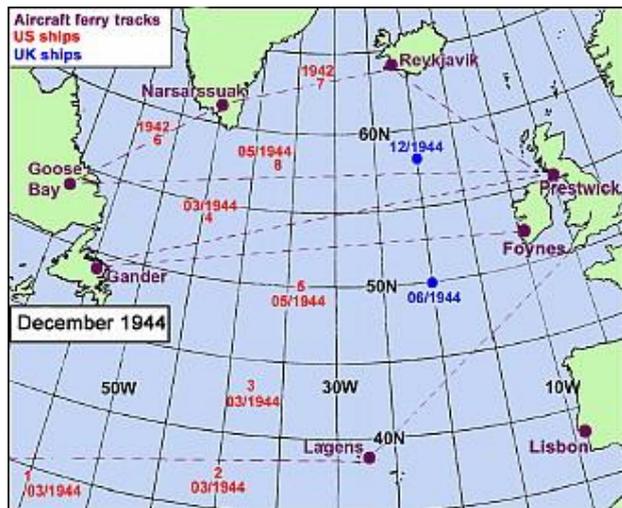


Figure 11. The weather ship network at the end of 1944.

The log books of the U-boats involved in the loss of the weather ships show they were not deliberately targeted; their paths had crossed purely by chance.

ACKNOWLEDGEMENT

I am grateful to Jeremy Greenaway for his permission to use his father’s painting of *HMS Hoste* off Anglesey.

SOURCES

Reed D.O. 1949. *The Coastguard at war: Weather patrol*. Vol VII (<http://www.uscg.mil/history/articles/USCGatWar-WeatherPatrol.pdf> – accessed 21 March 2014)

Continued at the top of the next column

NATIONAL ARCHIVES FILES

ADM1/11151 – Presumed loss of the SS *Toronto City* and SS *Arakaka*, June-July 1941

ADM1/16313 – Meteorological reporting from mid-Atlantic; Operation “CZ”

BJ5/73 – Floating meteorological stations

175 YEARS AGO

From *The Times*, 9 September 1839, Issue 17142, column E:

METEOROLOGY

The following document has been issued from the Colonial Office:

MEMORANDUM RESPECTING THE RECORDS TO BE KEPT OF THE STATE OF THE WEATHER IN THE BRITISH COLONIES.

The captains of ports, harbour masters, and keepers of lighthouses, or, where these officers do not exist, some other competent public functionary, should be required to keep journals of the weather, on the principle of the logbooks of ships.

A column should be specially reserved for inserting the height of the barometer.

Under the head of ‘remarks’ should be entered all meteorological observations considered worthy of particular notice.

When the keeper of a journal may hear that a vessel has encountered a storm, he will enter in it any information on the subject which he can rely on, together with the name of the ship, of her owner, and of the port to which she may belong.

With the view of tracing the cause of storms, the Trinity Board of London have given directions for the adoption of measures to obtain a more accurate record of the weather than has hitherto been kept at the lighthouses of Great Britain and Ireland.

The keepers of these lights having the opportunity of taking their observations by night as well as by day, great advantage may be derived from employing them in this manner. Officers in charge of colonial lighthouses should be instructed to keep similar journals. In noting the wind’s force, both in the harbour-master’s journals and in the lighthouse reports, it is desirable that the officers should adopt the numbers for noting the strength of the wind

now in use at Greenwich Observatory, and about to be introduced at the lighthouse under the Trinity Board.

In the cases of St Helena and Ascension, it is desirable that more precise information should be obtained by observation respecting the 'Rollers' at those islands. As the object of Her Majesty's Government in instituting these inquiries is the advancement of knowledge in sciences generally, the governors of the several British colonies will consider how far it may be in their power to obtain useful information bearing on the subject from countries adjoining to their governments in the possession of foreign Powers, or how far it may be useful to the study of meteorology to exchange the observations made within their governments for those of other countries in the neighbourhood.

If at any time desired, there would be no objection to the publication in the colonial newspapers of extracts from the journals.

75 YEARS AGO

The Second World War began 75 years ago, in September 1939. Who were the UK's senior meteorologists at that time? Here is the list, taken from the October 1939 *Air Force List* (HMSO), available online at <https://archive.org/details/airforcelistoct1939grea>

METEOROLOGICAL OFFICE

DIRECTOR

Dr N K Johnson

ASSISTANT DIRECTORS

E Gold

R Corless

A H R Goldie

PRINCIPAL TECHNICAL OFFICERS

F Entwistle (Overseas)

E G Bilham (General Forecast and Civil Aviation)

C E P Brooks (General Climatology)

H W L Absalom (*acting*) (RAF)

J M Stagg (*acting*) (Kew)

W A Harwood (*temporary*)(*acting*) (Edinburgh)

F J Scrase (*acting*) (Army and Instruments)

MARINE SUPERINTENDENT

C E N Frankcom

continued in next column

SENIOR TECHNICAL OFFICERS

E V Newnham

C K M Douglas

S F Witcombe (*acting*)

C S Durst (*acting*)

J Glasspoole (*acting*)

C E Britton (*acting*)

TECHNICAL OFFICERS

J Crichton

R A Watson

Miss E E Austen

L Dods

Commander J Hennessy, RNR

M J Thomas

Ft Lt F H Dight, RAF Reserve

J S Farquharson

Ft Lt W H Bigg, RAF Reserve

H L Wright

R Cranna

Miss E H Geake (*acting*)

A A Worthington

Miss L F Lewis (*acting*)

J E Belasco (*acting*)

CHIEF CLERK

H L B Tarrant

ROYAL AIR FORCE, MIDDLE EAST

R P Batty (Senior Technical Officer)

BRITISH FORCES IN IRAQ

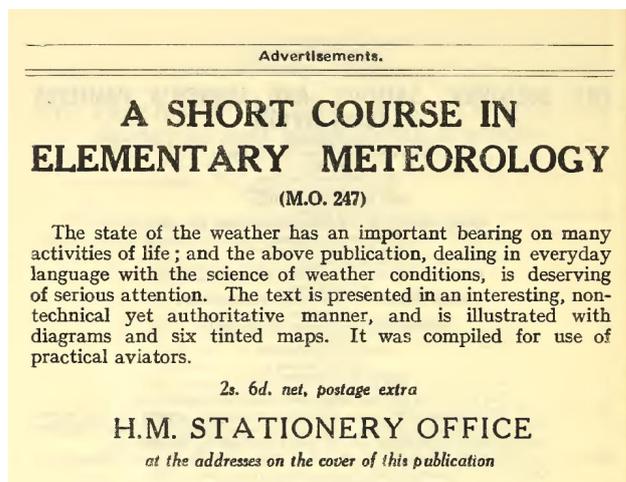
C V Ockenden (Senior Technical Officer)

ROYAL AIR FORCE, MEDITERRANEAN

N H Smith (Senior Technical Officer)(*acting*)

- - - - -

And a 1939 advertisement from this *Air Force List*:



PRESSURE

by Stan Cornford

Most Mums must occasionally tell their children "Don't tell stories!" Humans need years to distinguish truth from untruth. In my dotage, I see history as *his* story, as compared with *someone else's*. I know, for example, of two good original contemporary sources that clash with other more reliable contemporary sources and a third, which exists (or anyway existed) as 100 printed copies, became wrong because envisaged circumstances changed. In addition, which sources survive is often almost random.

A play performed last year in Edinburgh and this year at the Chichester Festival Minerva Theatre raises related issues. I recommend members Google: Pressure "David Haig".

At <http://www.cft.org.uk/pressure>, the Theatre describes it as "this little known *true* story" (my italics) of forecasting the weather for the June 1944 Allied assault on Normandy. Yet much of the play disagrees with the reports of those who were there.

Forecasting in 1944 was very unlike today's. Views of the three main forecasting centres (Met Office, US Army Air Force and Admiralty) diverged. Differences arose because of the techniques and mental models available, the many ways of fitting the (by today's standards) limited data, differences of experience and, in at least one case, because of aspiration for recognition. The UK's James Stagg, although a member of the Met Office, was criticized by many forecasters because he was not one of them. He was, though, a man of judgement who could withstand the stress of presenting his view of a three-party ensemble forecast as decisive guidance to hard military men themselves under intense pressure.

The play, however, is presented as a dispute, before Supreme Commander Eisenhower, between Stagg and the US Irving P Krick. Stagg defends the conventional physics-based synoptic method and knows that forecasting for more than a day or two ahead in Europe, on the scale and detail needed, then had no scientific basis. Krick is certain that his analogue method of forecasting, based on a collection of circumpolar surface charts, is always successful.

There are many other differences between accepted fact and presentation: at Cs-in C's conferences, US General Spaatz, ally of Krick, replaces Montgomery;

numbers arrive randomly by telephone to represent observations. Forecasting is done by pseudo-science:

" $1012=1/6 \times 1012(1012-1)(1012-2)$ " and

" $Q=(WBC+273.15)(1000/Mb)<0.286+(3m)$ "

A large synoptic chart is displayed on stage but the method to arrive at it is just unreal. Indeed, the author knows all this, and more, but sticks to his last: telling a story dramatically to interest many people is more worthwhile than telling it accurately to the few.

By definition, good historians, of course, want to find out and present as true an account of events, their causes and effects, as possible. As in science, mutual criticism and new discoveries change older ideas. Others, however, want a history which supports their own cause. ("History is written by the victors") Some, novelists for example, fill in gaps between recorded events with imagined action and conversations which make history readable by many non-historians.

Members may well think that the record of important real-life events should not be deliberately distorted to make history more entertaining. Not everyone agrees.

NEW OCCASIONAL PAPER

Royal Meteorological Society *Occasional Paper on Meteorological History* No.13 has just been published. It's by Joan Kenworthy and its title is: 'Albert Walter, O.B.E. (1877-1972), Meteorologist in the Colonial Service, Part II (First Director of the British East African Meteorological Service, First President, IMO Regional Commission No. I (Africa), Group Captain in the Second World War and advisor on meteorology to the Groundnut Scheme)'. Its ISBN is 978-0-948090-36-3 and it will soon be available through <http://www.rmets.org/publications/occasional-papers>

MEETINGS IN 2015 AND 2016

Information about meetings in 2015 and 2016 will be included in the autumn 2014 issue of this newsletter.

THE METEOROLOGICAL OFFICE AT SOUTHWICK HOUSE DURING THE SUMMER OF 1944

Introduction by Brian Booth

based on the unpublished memoirs of Rear Admiral Sir John Fleming, KBE, DSC.

During January 1944, Instructor Commander John Fleming, DSC, was appointed as Staff Meteorological Officer to the Allied Naval Commander in Chief of the Expeditionary Forces (ANCXF), Admiral Sir Bertram Ramsay. He was to be solely responsible for providing the forecasts required by ANCXF with the proviso they should be consistent with those supplied to the Supreme Commander of the Allied Expeditionary Force, General Eisenhower.

During May 1944, ANCXF established his operational headquarters at Southwick House, near Portsmouth in Hampshire, where Fleming was allocated half of a Nissen hut for his meteorological office. This consisted of two forecasters and four support staff working 24/7; the only communications were a teleprinter and telephones. When General Eisenhower subsequently announced his headquarters would be established alongside ANCXF's, Fleming realised he would have to share his very limited facilities with Eisenhower's meteorological adviser, Group Captain Stagg.

It was not an easy situation, but that is another story. What follows are the memoirs of WRNS Jean Checketts (née Farren), one of Fleming's support staff during the summer of 1944.

I am grateful to Harold Checketts and his daughter, Judith Taylor, for the accompanying photographs and their permission to publish Jean's story.

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NAVAL PARTY 1645 by Jean Checketts (née Farren)

I volunteered to join the WRNS in September 1943, and when I was asked if I had a job preference I requested meteorology, which was duly granted.

In early February 1944, after a short period of training, Commander Edwards – a Scotsman with a grey beard who was in control of staffing in the Naval Meteorology Branch at Lee-on-Solent – asked me to pack my suitcase and present myself at the Admiralty Forecast Section under Commander J Fleming in Whitehall. I must have looked an odd one out, in my WRNS uniform among the civilian

civil servants underground in the Citadel, where I had to learn the plotting of upper-air charts as well as the three-hourly synoptic charts, and acted as messenger going to the War Room to fetch weather reports from ships in distress in the Atlantic – always in code. Weather information from ships in the Atlantic was of great help to the weather forecasters.

In March that year I returned to the Fleet Air Arm camp at Lee-on-Solent, where I had been posted the previous October, glad to be away from the London raids, and was introduced to Harold Checketts, a naval seaman just returned from two years in Ceylon. He had been completing meteorological work on the Maldiv Islands after surviving the sinking of the *Prince of Wales* north of Singapore in December 1941. He was soon to be recording and measuring waves and tides with Leading Seaman Thomas at Sidmouth, reporting to the Invasion Swell Section at the Admiralty. I was asked to acquaint Harold with the English weather reporting stations and upper air codes used at the Admiralty. We soon made friends – he was very witty, with merry blue eyes and a suntan surrounding his ginger beard and moustache!

In April, WRNS Pamela Pinks arrived and Harold and Taffy were recalled from their work on the coast at Beer, and we were all told to be prepared for a move to an unknown destination. All our mail was to be addressed to Naval Party 1645.

A few days before the beginning of May 1944, we set off in a naval transporter filled with rolls of teleprinter paper, bottles of ink, barograph, Admiralty charts, barometer, kit bags and suitcases and were given a handshake from Captain Garbett, the Head of the Naval Weather Service (incidentally, brother to the then Archbishop of York). We clambered aboard thinking we might be going to France with the invasion. However, within an hour we found ourselves travelling through woods and parkland and arriving in the courtyard behind Southwick House, the advance headquarters of Admiral Ramsay ANCXF at HMS Dryad that had earlier been moved to Southwick House following a bombing raid on Portsmouth.

Our meteorological office, where we were to spend the next four-and-a-half months, was a half-size Nissen hut erected specially for the purposes of the invasion weather service, with security telephones linking the Air Ministry forecasters at Dunstable, the American forecasters at Widewing, Teddington and the Admiralty forecasters in Whitehall.

The little hut was hidden amongst trees to the north of the clock tower behind Southwick House, now also the D-Day headquarters of ANCXF. Apart from the important telephones, there was a large table for plotting the weather information as it came through on the teleprinter behind the door in the corner; half-a-dozen chairs; and a large desk for Commander Fleming, Admiral Ramsay's meteorological advisor.

Lieutenant Tunncliffe and Lieutenant Smith, both naval weather forecasters, joined us and we split up into watches of 24 hours on duty and 24 hours off, each day divided into four-hour watches, made up of a Meteorological Officer, a WRNS (Met) and a Rating (Met). Each rating had a night watch of 12 midnight to 08:00 every fourth night. It was Double British Summer Time, so the charts were always two hours past GMT and plotted every three hours; tephigrams and upper air charts were also plotted. If the Admiralty had any information of weather reports from the continent they would pass them to us over the phone in code and scrambled. The teleprinter never seemed to stop and, as I remember, neither did we.

However, we did have off-duty time, when not sleeping after the night watch; the weather in May 1944 was memorable for blue skies, sunshine, swallows, spring flowers and walks through the countryside. All leave had been cancelled and mail censored, so we were lucky to be free to wander down to the village of Southwick and the Golden Lion where, on occasion, Generals Eisenhower and Montgomery would meet. Monty's 21st Army Group and the Canadian troops who were to cross the Channel were camped in the woods all round the House, and from the top of the Portsdown Ridge we could get a panoramic view of Portsmouth and the Solent. The whole water surface was so crowded with craft of every size, from landing craft to battleships; all lying so close it seemed that they would find it difficult to move to their destinations across the Channel.

Barrage balloons glinted in the May sunshine and everyone, it seems, was expecting the summer weather to continue. Harold and I walked down Portsdown Hill to Cosham many times, and often had a lift back up to Southwick House in General Montgomery's jeep – when otherwise unoccupied!

At the end of May there was more activity in the woods behind Southwick House. Tents and sleeping quarters were being erected for the Supreme Headquarters of the Allied Expeditionary Force

Command Post; Monty's advance headquarters; and ANCXF staff from London. Among the new arrivals were Group Captain Stagg and Colonel Yates of the US Army Air Force – appointed to advise General Eisenhower, together with Commander Fleming – on weather matters. Eisenhower often came into our little hut prior to D-Day to see the naval forecaster. Harold and I were on duty on alternate four-hour watches in the met. hut during the day with Lieutenant Tunncliffe, who would draw up the weather charts as soon as we had plotted them, but every fourth night one of us would be working on our own. I remember changing watches at midnight with Harold and sharing a cup of ship's cocoa, very strong and swimming with oil, and corned beef sandwiches which Basil the cook had kept for us. Pam and Taffy had similar watches with Lieutenant Smith drawing up the charts. We did not know at the time that D-Day had been planned for June 5th, but what we were aware of was the growing stress and anxiety of those around us during the first few days in June. This included Dr Stagg and Colonel Yates, as well as our Naval Officers. Several times a day, the telephones in our hut were used to hold conferences, on scrambled lines, with the weather centres at Dunstable, the Forecast Section at The Admiralty where I had worked in February, and also with Widewing at the previous SHAEF in Teddington where the American forecasters were based. Sometimes Dr Stagg, Colonel Yates and Commander Fleming would be sitting at the telephones with the latest weather chart for over an hour listening to the forecasters presenting their views. Agreement on the final forecast to be presented to General Eisenhower and his Chiefs of Staff was apparently never easy!

It is difficult to explain the tension of those few days in early June 1944. The important chart seemed to be the midnight (00:00 GMT) plotted at 02:00 (as we were using double British Summer Time), the forecast teams could never agree, and the duty rating was obliged to grope through the woods in the dark to find the sleeping place of the duty forecaster!

On the night of June 4th/5th the wind howled through the pine trees and, as I found my way back to the met. hut, I realized that the great armada ready to move was at the mercy of the weather. No one had any sleep that night as the rain and storms lashed the coast. At 04:15, General Eisenhower, on the advice of Dr Stagg, Colonel Yates and Commander Fleming, deferred the operation and the Invasion forces were put on hold for twenty-four

hours. However, after an unexpected break in the weather, with a cold front moving south much further than expected over Portsmouth at 21:00, the final decision to go ahead was given at 04:15 on Monday June 5th.

Harold and I had been off duty on June 5th and in the afternoon had walked down the hill to the Roadhouse in Cosham to a small birthday party given by two WRNS from my cabin – a Commander’s wife and her daughter Frieda. Civilians in the café were guessing about the probable start of D-Day and it was a strange feeling, knowing that the ‘go ahead’ had already been given. We were in sombre mood as we walked the three miles back up the hill to Southwick village across the bridge, where the smell of rotting seaweed made us hold our noses. We thought of all the young people who might die on the beaches as daylight approached.

At midnight on Tuesday June 6th we could hear the continual roar of bombers overhead on their missions to prepare the way for the D-Day operations. I was on duty in the met. hut from 08:00 that morning when General Eisenhower spoke over the radio to all the troops as he stood with his microphone just outside our small hut at the back of Southwick House. The sky was full of low flying planes and gliders and there was a great feeling of apprehension.

Although the tension disappeared for a while once the decision had been made, the weather remained stormy and we were kept busy with preparing the weather charts. A north-easterly gale lasting three days from 19th June nearly proved disastrous for our supply lines across the Channel, threatening to break up the Mulberry Harbour. Commander Fleming was under great stress once more. Admiral Ramsey later flew over to France but was killed when his aircraft crashed.

In all the time we were working in the met. hut behind Southwick House as part of Admiral Ramsay’s headquarters, we never came into contact with the WRNS of Naval Party 1645 working in the War Room in the front part of the House. Total secrecy was kept, and no doubt they were unaware of our existence too and of what focus of attention there was on weather information for those days in early June 1944.

It wasn’t until September 10th that we all went home on leave for a much needed rest!

POSTSCRIPT

Fifty years later, we received an unexpected telephone call for Harold and Jean Checketts. It was an Admiral Fleming, by then ninety years old, asking us if we remembered the terrible days of tension for the weather forecasters prior to June 5th 1944 – especially for Naval Party 1645. ... Yes, we did remember.



*Rear Admiral John Fleming, circa 1952.
(Charles Bates collection)*



*WRNS (Meteorologist) Jean Farren,
circa 1944. (© Judith Taylor)*



*Able Seaman Harold Checketts,
circa 1943. (© Judith Taylor)*

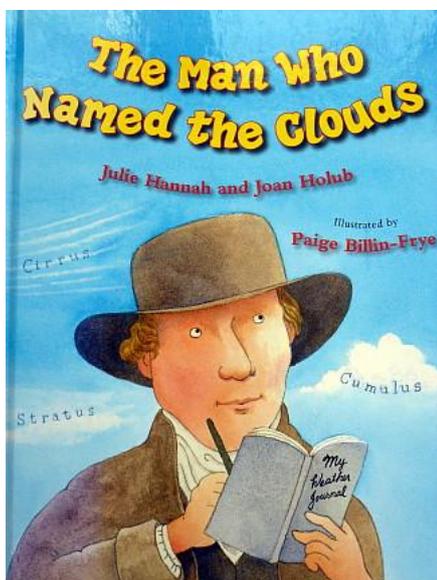
THE MAN WHO NAMED THE CLOUDS

by Howard Oliver

One of the important remits of the Royal Meteorological Society is outreach to young people.

As far as the history of meteorology and oceanography goes, talks or books describing exciting exploits of historical figures in our science (such as the balloon flights of James Glaisher) are obvious choices. However, well-presented illustrated biographical accounts of important figures are also likely to be of interest.

One children's book that definitely fits the bill is *The Man who named the Clouds* by Julie Hannah and Joan Holub, published by Whitman, 2006. Copies are easily obtained online.



It is a well-presented illustrated account of the life and achievements of one of our most revered scientists, Luke Howard, whose portrait hangs of course in our Society committee room.

It is aimed at 8 to 12 year olds and covers his whole life from his Quaker childhood to his old age with his family of eight children. The stories of his devising the classification of clouds and writing *The Climate of London* are of course particularly stressed. A full set of cloud types photographs and descriptions are also included.

The book has beautiful colour illustrations throughout and also includes many pages called "My Weather Journal" which explains meteorological processes in an easily-understood way and gives a range of activities to try.

It would make an excellent present for any youngster as well as giving useful ideas to adults of ways to answer questions and excite children in the field of meteorology.

OFFICERS OF THE BRITISH METEOROLOGICAL SOCIETY FOR 1864

List published in *Proceedings of the British Meteorological Society*, 1864, Vol. II, No.14, p.263.

PRESIDENT

Robert Dundas Thomson, M.D., F.R.S.L.&E.

VICE-PRESIDENTS

Antonio Brady, F.G.S.

S.W.Silver, F.R.G.S.

John W.Tripe, M.D.

S.C.Whitbread, F.R.S., F.R.A.S.

TREASURER

Henry Perigal, F.R.A.S.

SECRETARIES

J.Glaisher, F.R.S., F.R.A.S.

C.V.Walker, F.R.S., F.R.A.S.

FOREIGN SECRETARY

Lt-Col. Alex Strange, F.R.S., F.R.A.S.

LIBRARIAN

H.S.Eaton, M.A.

OTHER MEMBERS OF COUNCIL

N.Beardmore, C.E., F.R.A.S., F.R.G.S., F.G.S., &c.

C.Brooke, M.A., F.R.S.

Latimer Clark, C.E.

W.P.Dymond

Francis Galton, M.A., F.R.S., F.R.G.S.

J.P.Harrison, M.A.

John Lee, LL.D., F.R.S., F.R.A.S., F.L.S., F.G.S., F.S.A.

R.W.Mylne, C.E., F.R.S., F.G.S., F.S.A.

D.Slate

T.Sopwith, M.A., F.R.S., F.G.S.

Balfour Stewart, M.A., F.R.S.

G.J.Symons

Thomson died on 17 August 1864 and Vice-President S.C.Whitbread succeeded him. Whitbread had previously served as President. Indeed, he was the Society's first President. For pen portraits of Thomson and Whitbread, see, respectively, the August 1998 and December 1997 issues of *Weather*.

The Account of the Treasurer of the British Meteorological Society for the year 1863 (published on p.260 of the 1864 volume of the Society's *Proceedings*) shows that the balance was £47 15s 4d on 1 January 1864, an increase of 7s 1d over the year. Expenditure in 1863 totalled £335 8s0d, of which £12 14s 6d went on postage stamps and £7 9s 7d on "Attendance, Tea, &c., in Great George Street" (where the Society rented accommodation in the early 1860s). Glaisher had an assistant who was paid £1 a week.

ONE OF SIR NAPIER SHAW'S CHRISTMAS CARDS

see picture on page opposite



Oliver Ashford has written as follows:

Rummaging through some old papers, I came across a Christmas Card which I thought had been lost forever. Reminded me of what my elderly neighbour used to say: "Don't waste time looking for lost articles; wait until they find you". The card been given to me by Elaine Austen, formerly a well-loved, if somewhat severe, Met Office Librarian, but now perhaps better known as assistant to Sir Napier Shaw in writing his monumental 4-volume *Manual of Meteorology* – she had inherited some of his papers and collection of meteorological books. The card was sent in December 1938 from Sir Napier to Dr and Mrs L.F. Richardson "with cordial reminiscences". Of particular interest is how Sir Napier illustrated the 'Evolution of the Drama of Weather' of 6 November 1937 to 5 November 1938, an 'Annus Memorabilis'. Perhaps somebody could prepare a similar diagram for the remarkable weather of November 2012 to November 2013? I would gladly use it for my next Christmas Card.

From the *Daily News*, Wednesday 10 January 1877, Issue 9585, page 5

concerning flooding in various parts of the country:

With the change of weather yesterday a perceptible lowering of the waters in Lambeth and Nine Elms was at once apparent, and hopes are now entertained that the sufferers by the high tides and floods have seen the worst of their troubles. The operations of baling and pumping out the water in cellars and ground-floors was carried on with vigour.

At Richmond yesterday the flood at the railway station was higher and more extensive than ever, the water rising several inches above the platform, and the length of line under water being increased to about four hundred yards. The waiting and refreshment rooms, booking office, &c., were flooded, necessitating the laying down of a temporary floor composed of three-inch deal planks for passengers to walk on. The platform also was raised in this way about seven inches, notwithstanding which on the arrival of the trains persons had to beat a hasty retreat and mount the stairs to avoid being wetted. All the islands in the vicinity of Richmond, Isleworth, and Twickenham are literally under water, the state of the tide making but slight difference, the swollen state of the river being chiefly due to land water and the overflow from the disabled lock at Teddington.

The River Colne in Herts and Bucks is still swollen to a considerable extent. At Thorney Broad Fishery it has overflowed its banks, and West Drayton racecourse is consequently suffering. In the Watford district the rural postmen are the principal sufferers, for in some of the roads the water is still so deep that they have to wade in it over their legs, and as the return journeys are performed after dark, they are attended with considerable danger.

Our Oxford Correspondent writes:—The floods have sunk several inches to-day, but are still very high. The weather however this evening is drier than for several days past, and gives promise of a change to fair, in which case there will soon be a perceptible diminution.—The body of the unfortunate man Bishop, who was supposed to have been drowned about a week ago, has not yet been recovered, although the process of dragging the river has been continued up to the present time. With such a rapid flow of water, it is thought the body may have been carried away some distance.

The floods in the Cherwell Valley are subsiding. Yesterday morning a wall, nearly two feet thick, at the back of the Unitarian Chapel, Banbury, fell with a great noise. Fortunately no one was injured. The mortar of the wall had been loosened by the heavy rains. A portion of another wall in Dashwood-road also fell. Men are still employed at the Harbury landslip, the soil removed from which has been laid along the line at intervals for a distance of about twelve miles.

Agricultural prospects are getting very serious in Dorsetshire, in consequence of the large tracts of land under water. It is feared much of the newly sown cereals will be completely washed away. A violent thunderstorm, with vivid lightning, on Sunday has been followed by incessant rain. The turnpike road at Godmanstone has been under water during the week, the traffic having to be diverted. The old Charminster road is rendered impassable by the overflow of the Frome, and the Weymouth road is in a similar condition. At Blandford a boy while watching the stream was caught in the rapid current and drowned.

The inundations in West Somerset appear to be still extending. Yesterday evening the depth of water over the submerged portions of the main line of the Great Western Railway between Bridgwater and Durston was 2ft. 7in. This is half a foot deeper than on Monday, but the railway officials insist that the trains can run safely at a slow pace through three feet of water. Boats are rowed alongside in view of any emergency, and a pilot engine is kept on the outskirts of the flood. On the Yeovil branch line the water is lowering, but on the Somerset and Dorset Railway, now worked jointly by the Midland and South Western companies, in the neighbourhood of Edington and Shapwick stations, the water yesterday morning entered some of the carriages.

Langport has been flooded more than has been known in the memory of the "oldest inhabitant," and that individual has nearly completed his century. Roads have been impassable to pedestrians for many days, and have been almost closed to traffic. The principal street has been flooded, and business suspended. Yesterday the bank of the River Parrett near Aller gave way, and Langport was relieved, but at the expense of a vast area, over which the water has spread.

Yesterday morning the floods at Worcester had subsided to the extent of one foot. Rain, however, has again commenced to fall, and this will probably check the subsidence. Great distress prevails.

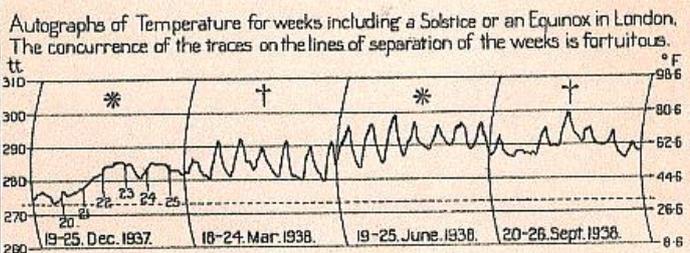
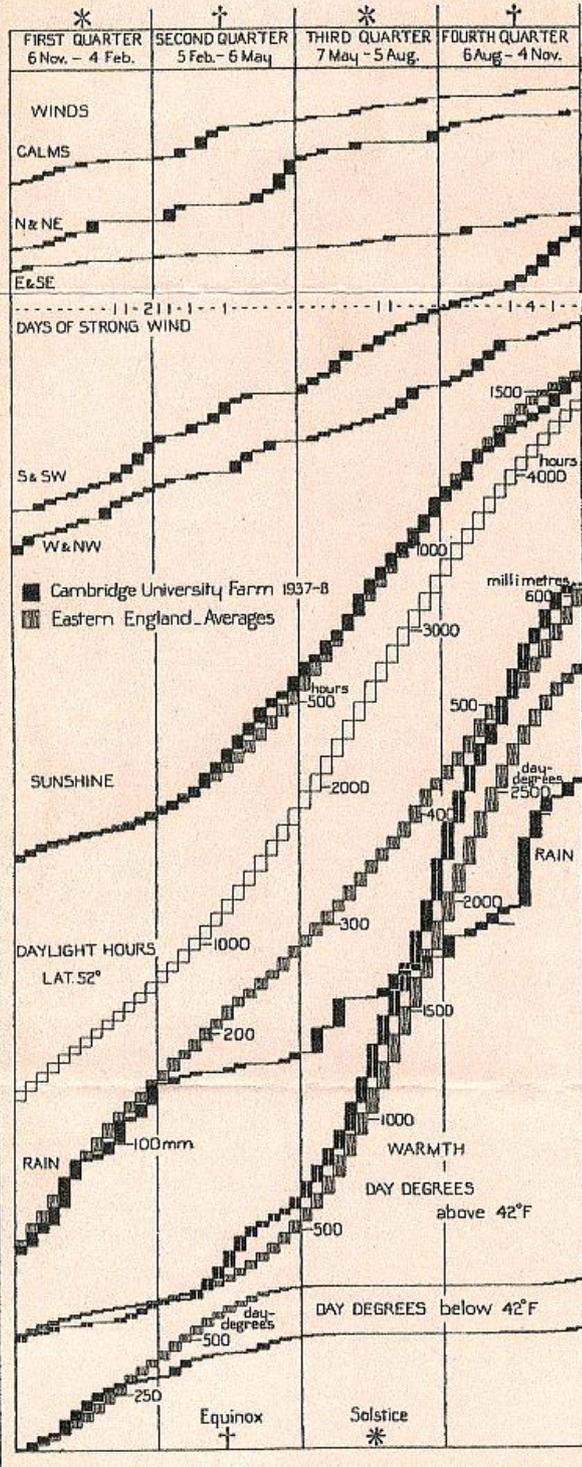
The floods in and around Salisbury have now become of a very serious nature, and yesterday they were increasing to an alarming extent. What is called the Back Stream, a affluent of the Avon, has now risen about 8 feet, filling all the lower rooms. The passengers by the early train in the morning—at three o'clock—had to wade through one of the main streets nearly 3 feet deep. The grounds behind the infirmary are six inches deep in water, and from the collars of the Cathedral the overflow has been pumped out. At Maddington a man has been carried away by the stream. Several walks in Salisbury have been blown down by the gales, and the damage done is most serious.

One of Sir Napier Shaw's Christmas Cards

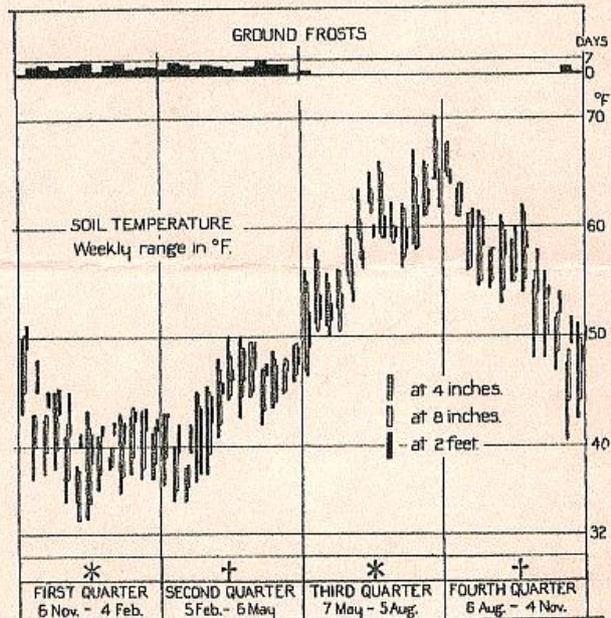
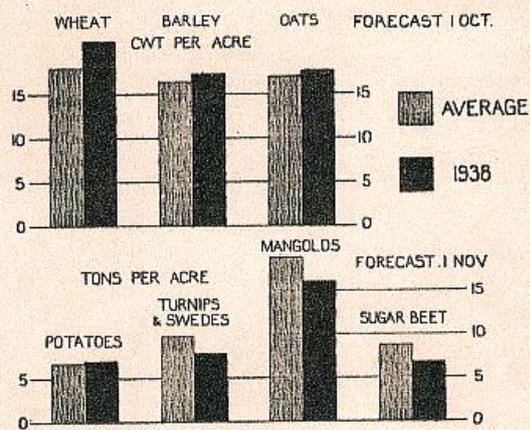
EVOLUTION OF THE DRAMA OF WEATHER

In the Period 6 November 1937 to 5 November 1938 — Annus Memorabilis.
Normals for England East and Weekly Weather at Cambridge.

PICTORIAL CORRELATION



YIELD OF CROPS in 1938 and AVERAGES



THE METEOROLOGY OF D-DAY REVISITED

National Meeting of the Royal Meteorological Society organized by the History Group, held on Saturday 17 May 2014.

Held at the Royal Air Force Museum, north-west London, this meeting was attended by 54 people and attracted media attention, with considerable television and newspaper coverage. The meeting focused on aspects of D-Day meteorology that have come to light in the past two or three decades and thus helped clarify and correct who knew what about weather developments in June 1944 and how they knew. As is now customary at meetings of the History Group, there was a display of relevant material, including documents and photographs.

The first speaker was **Stan Cornford**, whose talk was called *Forecasting wind and weather for D-Day – the traditional view*. As he said in the abstract for his talk, “in a period of changeable weather, General Eisenhower achieved an element of surprise by exploiting a brief window of opportunity when his meteorological officers thought the weather would be just about tolerable”. He explained that the weather and sea condition requirements for the invasion day were not only a spell of fine weather (ideally four days with winds less than Force 3) but also low tides so that enemy obstructions were visible (i.e. low-water spring tides just before and just after full or new moons). Stan introduced the principal groups and individuals in the drama that was the D-Day weather forecast – the Admiralty, the Meteorological Office, and Widewing, USAAF – Stagg, Yates, Wolfe, Thorpe, Hogben, Holzman, Krick, Fleming – and reviewed the rivalries between the groups – rivalries that had to be managed. Whatever the rivalries, though, and however the all-important forecast was determined, the forecast proved sufficiently accurate for a successful D-Day operation.

The next speaker, **Brian Booth**, took as his title a quotation, “Yes, a cold front has appeared from somewhere”, from Stagg’s book *Forecast for Overlord*. Brian said that Stagg’s account of the events leading up to the D-Day forecast have long been accepted as the only definitive account, but he wondered just how accurate the account was. Using Stagg’s own diary (in the National Meteorological Archive), together with previously unseen documents in the National Archives and letters Stagg exchanged with C.K.M. Douglas, Brian explored the background to the book and its veracity and

found from a very thorough analysis of the evidence that there were many inconsistencies between Stagg’s book and his own diaries and not a few statements in the book which cannot be correct.

Donard de Cogan also used a quotation as the title for his talk: “A report from Blacksod (Belmullet) was crucial in deciding which team of forecasters had the right analysis”, attributed to Dr Stagg. As Donard said, these words hid an iceberg of detail. And as he put it in the abstract for his talk, “In so far as the ‘Weather War’ was concerned, the Irish Free State was not neutral. It provided the Allies with exclusive access to meteorological information while at the same time using censorship and other means to prevent Germany acquiring any knowledge of weather conditions in Ireland.” Donard enlarged upon all this in his fascinating talk.

Anders Persson took a critical and detailed look at the D-Day weather forecast and argued that the famous forecast was right for the wrong reason. From an extremely detailed analysis of documentary sources and previously disregarded British, Swedish and German weather maps, he was able to suggest that the Allied forecasters misjudged the ‘window of opportunity’ for the invasion, whereas the Germans, relying on more Atlantic weather information than previously thought, did not but then drew the wrong conclusions.

Finally, **Adrian Simmons** revisited the meteorology of June 1944, including the alternative dates for the D-Day operation, using a modern analysis and forecasting system, which he summarized thus in his abstract: “The European Centre for Medium-Range Weather Forecasts and its partners are building a record of atmospheric conditions over the 20th century by applying the techniques of modern numerical weather analysis and forecasting to historical surface and upper-air observations”. He listed the various sources of data which were used in the analyses, these including digitized records from the deck logs of Royal Navy ships and submarines for the period 1938 to 1947. The results obtained by Adrian and his colleagues were impressive. As he said, though, improvements depend upon better modelling and data assimilation, better quality control and correction of existing data holdings, and recovery of additional data.

By common consent, this was a most successful and important meeting which shed much new light on a vital wartime weather forecast.

For group photographs, see page opposite.



D-DAY METEOROLOGY MEETING

◀ Left to right:
Malcolm Walker (History Group
Chairman) and speakers Anders
Persson, Donard de Cogan, Brian Booth,
Adrian Simmons and Stan Cornford.

Photographs by Richard Griffith

⬇ Many of those who attended the
meeting.



THE FIRST PUBLICATION OF *THE SOUTH POLAR TIMES*, VOLUME IV

by Ann Savours

The following has been reproduced from *Polar Record* (2014, Vol.50, p.112) by kind permission of Cambridge University Press and the Editor of *Polar Record*, Ian Stone.

Polar bibliophiles, librarians and readers will be familiar with the three handsome facsimile volumes of the first Antarctic newspaper, published in 1907 and 1914 and edited in turn by E.Shackleton,

L.C.Bernacchi and A.Cherry-Garrard during the National Antarctic Expedition 1901-1904 and the British Antarctic Expedition 1910-1913. These expeditions were led by Captain R.F.Scott RN in *Discovery* and *Terra Nova* respectively. From *SY Discovery*, beset for two winters in the ice of McMurdo Sound were made the first extensive sledge journeys into the interior of the Antarctic continent, including the great ice sheet or plateau.

These were further prolonged, following Shackleton's *Nimrod* expedition, while the pursuit of science during both Scott's expeditions led to the publication in London of two monumental sets of scientific and geographical results, plus new charts and maps.

During the lightless Antarctic winters, boredom and melancholy (if there were any!) were kept at bay by contributions from officers, scientists and men to what became known as *The South Polar Times*. A precedent for these efforts, both serious and full of fun, had been set in the Arctic during the 19th century by the Royal Naval exploring expeditions, from the 1820s to the 1870s. On the return of ships and men to the British Isles, a number of these amateur literary productions were published in London, at the wish mainly of families and friends.

Four winters were passed on Ross Island by the Scott expeditions, yet only three facsimiles were published after their return. Regarding these three published volumes it is interesting that members of the lower deck of *Discovery*, such as Frank Wild, Thomas Kennar and Arthur Quartley contributed a number of lively articles. None appear to have done so in *Terra Nova*. Dr Edward Wilson became well acquainted with Quartley and remarks about him in his *Discovery* diary, as being the son of an artist in the United States, which turns out to be so.

However, a fourth volume was in fact put together and edited by Cherry-Garrard, with Frank Debenham's help, during the winter of 1912. The contributors to this fourth volume were members of the small party of thirteen living in the hut at Cape Evans, in the charge of Surgeon E.L. Atkinson, RN. They knew that somewhere to the south of them, on the route to or from the South Pole must lie members of the pole party, with their diaries and records. (Others then still remaining in the Antarctic were members of the Northern Party, under the leadership of Victor Campbell, on the opposite shore of McMurdo Sound).

The fourth volume of *The South Polar Times* was issued with great *éclat* on Midwinter Day 1912. The keeping of diaries, the recording of meteorological observations, exercising the Himalayan mules landed from *Terra Nova* plus other duties and pastimes occupied the winter days, during which, according to Debenham, it was agreed not to discuss the fate of the pole party. As is well known, Atkinson took the decision to try and discover this and not to relieve the Northern Party.

With the sighting of the tent on the Great Ice Barrier and the retrieval of records, diaries, letters and geological specimens, the fate of the pole party became known. Members of the Northern Party returned safely to Cape Evans and all boarded *Terra Nova* for the long voyage home.

The pages of *The South Polar Times* of winter 1912 travelled with them and must have been handed over to Reggie Smith of Smith, Elder who had already published Scott's narrative and the two *Discovery* volumes of *The South Polar Times*. Smith and his wife Isobel had become personal friends of Scott, and of Wilson, whose watercolours so much enhanced the publications. Although the firm published a third volume (winter 1911) which appeared in 1914, it was decided that there should be no Volume IV (winter 1912), since it lacked illustrations by Wilson, articles by Scott and photographs by the distinguished 'camera artist' Herbert Ponting. The three published volumes were re-issued in 1982 by J. and S.L. Bonham of London.

The 1912 document came into the hands of Mrs Smith, after her husband's suicide in 1916. She bequeathed it many years later to Cherry-Garrard, from whose widow, Mrs Angela Mathias, it came in 1959 to the Scott Polar Research Institute, Cambridge. At the request of the late William Mills, then the Institute's Librarian, the author undertook to edit *The South Polar Times* IV for publication over a decade ago. Supported with enthusiasm for several years by the Antarctic bibliophile and traveller, Mr Joe Bugayer, and designed with great care by Vera Brice, a very special fourth volume emerged in 2010-2011, in an edition of 500 copies, to stand on the bookshelf beside the earlier three. This was published in Cambridge by the Scott Polar Research Institute with J. and S.L. Bonham, and it is dedicated to the wintering party, 1912, and to the late William Mills. The volume is in dark blue buckram, gold blocked on the spine, with a paper insert printed in full colour. It matches the earlier three volumes (as published in 1907 and 1914). The scene portrayed on the front board of *The South Polar Times* IV is of the hut at Cape Evans beneath Mount Erebus, replicating that of *The South Polar Times* III (winter 1911).

Two interesting articles on sledge flags, a peculiarly British feature of polar travel, are published as Appendices. The first article is by H.G. Carr, and the second is by Barbara Tomlinson, charmingly entitled 'Chivalry at the poles'.

It is fitting that publication should have taken place during the centenary of Scott's last expedition, which was commemorated in St Paul's Cathedral on 29 March 2012 in the presence of HRH the Princess Royal, Patron of the Antarctic Heritage Trust. That same year, the Folio Society modified and re-issued Ann Savours' *Commentary* in a slip case, accompanied by a special box containing separate facsimiles of all twelve issues of *The South Polar Times*. That edition of one thousand copies is now sold out, while a few copies of *The South Polar Times* IV, at £250 remain. These and copies of Bonham's 1982 publication of all three volumes, at £600, may be ordered from Mr John Bonham, at 84 Westbourne Terrace, London W2 6QE, email: info@bonhambooks.co.uk. Proceeds go towards the work of the Scott Polar Research Institute.

RECENT PUBLICATIONS

AVILES, L.B., 2013. *Taken by storm 1938: a social and meteorological history of the great New England hurricane*. Boston, Mass: American Meteorological Society, 265 pages. ISBN 9781878220370.

BENTLEY, L., 2014. Obituary of Ernie Pepperdine. *Weather*, **69**, 194.

BIGG, G.R and Wilton, D.J., 2014. 'Iceberg risk in the Titanic year of 1912: was it exceptional?'. *Weather*, **69**, 100-104.

BURT, S., 2014. 'Britain's lowest barometric pressure since 1886'. *Weather*, **69**, 79-81.

BURTON, B., 2014. 'Stevenson screen temperatures – an investigation'. *Weather*, **69**, 156-160.

CHRONOPOULOU, C. and MAVRAKIS, A., 2014. 'Ancient Greek drama as an eyewitness of a specific meteorological phenomenon: indication of stability of the Halcyon days', *Weather*, **69**, 66-69.

DONOGHUE, S. *et al*, 2014. 'The microclimate of Mawson's Hut based on snow and ice core analyses', *Polar Record*, **50**, 37-42.

HOSKINS, B., 2014. Obituary of Professor Duzheng Ye. *Weather*, **69**, 82-83.

LEWIS, J.M., 2014. 'Edward Epstein's stochastic-dynamic approach to ensemble weather prediction'. *Bulletin of the American Meteorological Society*, **95**, 99-116.

Abstract: *Without regard for limitations of computer resources that prohibited ensemble weather forecasting in the 1960s, Edward Epstein forged ahead and*

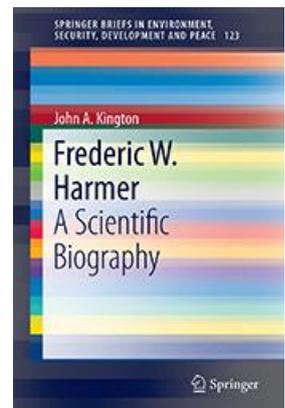
developed a stochastic-dynamic system that stimulated dynamicists worldwide.

KENWORTHY, J.M., 2014. 'Albert Walter, O.B.E. (1877-1972), Meteorologist in the Colonial Service, Part II (First Director of the British East African Meteorological Service, First President, IMO Regional Commission No. I (Africa), Group Captain in the Second World War and advisor on meteorology to the Groundnut Scheme)'. *Occasional Papers on Meteorological History* No.13 (Royal Meteorological Society), 55 pages. ISBN: 978-0-948090-36-3.

KINGTON, J.A., 2014. *Frederic Harmer: a scientific biography*. SpringerBriefs in Environment, Security, Development and Peace, Volume 19, Springer-Verlag, Cham, Heidelberg, New York, Dordrecht and London, ISBN (Print): 978-3-319-07703-1 ISBN (Online/eBook): 978-3-319-07704-8 DOI: 10.1007/978-3-319-07704-8

Description from http://afes-pressbooks.de/html/SpringerBriefs_ESDP_Harmer.htm

Comprising the first definitive account of the geological and palaeo-meteorological studies made by Frederic W. Harmer (1835-1924), this book contributes a previously missing chapter to the history of science. The main objective of the author is to ensure that the scientific work of Harmer, which unfortunately has been widely neglected or forgotten, becomes more generally known and acknowledged. The balance of this deficiency will be redressed by bringing to light in this volume his contributions to the history of science to an audience of academic and lay readers of the current literature.



Harmer was one of the pioneers in the field of East Anglian geology as well as one of the last members of a distinguished group of amateur geologists who had been responsible for making major advances in the science during the Victorian era and early years of the 20th century. In particular, he played a key role in elucidating the Pliocene and Pleistocene stratigraphy in the east of England by developing the use of mollusca for biostratigraphic correlation within the Craggs of East Anglia.

KIRK, P.J., 2014. 'An updated tornado climatology for the UK: 1981-2010'. *Weather*, **69**, 171-175.

LOWINSKI, L.M., 2014. 'Belgium's record rainfall event: a look back at the Eupen flash flood of 1953'. *Weather*, **69**, 147-153.

NASH, D.J. and ADAMSON, G.C.D., 2014. 'Recent advances in the historical climatology of the tropics and subtropics'. *Bulletin of the American Meteorological Society*, **95**, 131-146.

Abstract: *Historical documents from tropical regions contain weather information that can be used to reconstruct past climate variability, the occurrence of tropical storms, and El Niño and La Niña episodes.*

NOTT, J. *et al*, 2014. 'The world record storm surge and the most intense southern hemisphere tropical cyclone'. *Bulletin of the American Meteorological Society*, **95**, 757-765.

Abstract: *New evidence suggests that Tropical Cyclone 'Mahina' (5 March 1899, Queensland, Australia) had a central pressure of 880hPa and could have produced a maximum storm surge of approximately 9m and a total inundation of roughly 13m.*

SAVOURS, A., 2014. 'The first publication of *The South Polar Times*, Volume IV', *Polar Record*, **50**, 112.

WELKER, C. *et al*, 2014. 'The D-Day landing of June 2014: extra-tropical cyclones and surface winds in June 1944 compared with a climatology based on the 20th century reanalysis', *Weather*, **69**, 176-180.

**WEATHER, May 2014, Volume 69, No.5
Special Issue: Hubert Lamb centenary**

CORNES, R.C. Editorial: Hubert Lamb Centenary Special Issue, p.115.

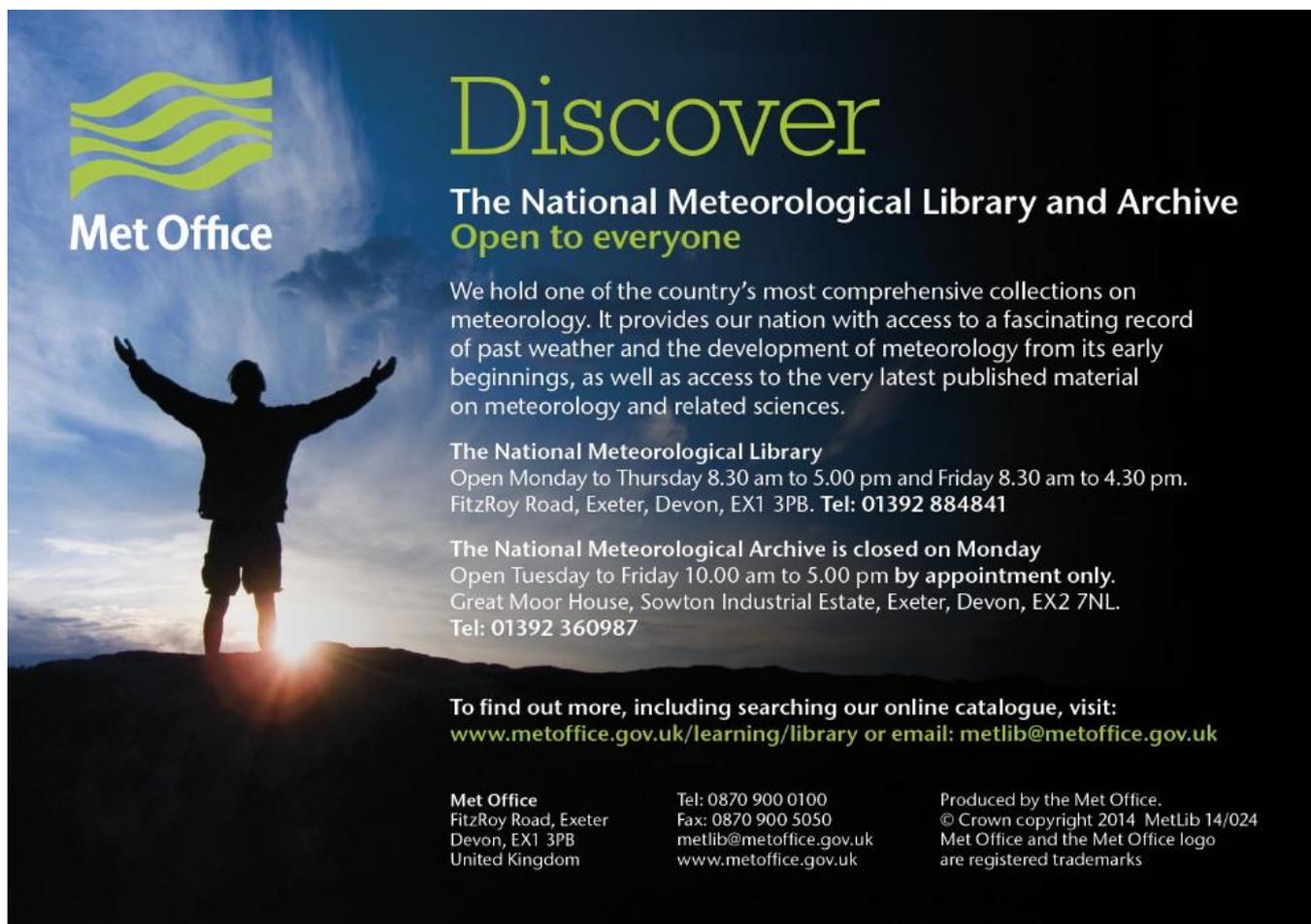
CORNES, R.C. 'Historic storms of the northeast Atlantic since circa 1700: a brief review of recent research', pp.121-125.

JONES, P.D. *et al*. 'The development of Lamb weather types: from subjective analysis of weather charts to objective approaches using reanalyses', pp.128-132.

PRIBYL, K. 'The study of the climate of medieval England: a review of historical climatology's past achievements and future potential', pp.116-120.

WHEELER, D. 'Hubert Lamb's 'treasure trove': ships' logbooks in climate research', pp.133-139.

We heard with great sadness that Moira Lamb, Hubert's widow, passed away on 15 June 2014. We are so delighted she was able to spend so much time at the Hubert Lamb centenary meeting at Norwich in September 2013 and also that she lived to see the publication of *Weather's* Special Issue in May 2014.



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THIS IS YOUR NEWSLETTER

Please send comments and contributions to:
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✉ MetSocHistoryGroup@gmail.com

The next newsletter will be published in October 2014.
Please send items for publication to Malcolm Walker
by 15 October 2014.

Malcolm would particularly welcome reminiscences of life in the Met Office (at home or abroad) in the 1950s, 1960s and 1970s, also recollections of meteorological activities in universities, research institutes or the services (at home or abroad) in those decades. He would also welcome comments and letters for publication.