

HISTORY GROUP NEWSLETTER



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

Issue No. 1, 2025

January 2025

News

Julian Mayes, Secretary / Newsletter editor

HAPPY NEW YEAR

Welcome to a much-delayed newsletter, originally intended as a 2024 issue. It was not possible to issue newsletters in 2024 due to events outside my control – specifically an accident in the summer that rendered me out of action for a few months. This issue includes part 1 of an account of the Thunderstorm Census Organisation a century after its formation (Jonathan Webb), an assessment of Stagg's account of weather forecasting for D-Day (Brian Booth) and the story of The Sledge Patrol (Alan Heasman).

News of the History Group

- Welcome to new members Katerina Zouboulakis, Rebekah Higgitt and Jim Galvin. Since last spring we have lost two prominent members of the Group – Joan Kenworthy and Maurice Crewe. They are remembered in the next column.
- The eagle-eyed reader will notice that we have added 'climatology' to the full name of the group. This reflects our existing range of interests.
- **New Year Honours** Congratulations to Group member Dr Elizabeth Kent of the National Oceanography Centre on the award of MBE in recognition of her research into global temperatures and to Prof. Phil Jones (UEA) on the award of an OBE for his services to climatology.
- Please remember to complete the survey on the Group – the link is on the e-mail that brought you this newsletter.
- For news of the Distinguished Voices Podcast please see page 12.

Joan Kenworthy

Joan Kenworthy, former Principal of St. Mary's College, Durham University (and formerly Liverpool University) died in May 2024 at the age of 90. She had a long-standing interest in climatology with a particular focus on East Africa and the Durham climatological record. Joan will be remembered for her contributions to the Association of British Climatologists and to the History Group where she remained a committee member until 2015. Joan wrote four of the Group's Occasional Papers and was awarded our Jehuda Neumann award. She co-hosted conferences on the history of UK and colonial observatories. An obituary was published in the October 2024 *Weather*. She was also an honorary alumna of Liverpool University
<https://news.liverpool.ac.uk/2024/05/23/obituary-joan-kenworthy/>

Maurice Crewe

Maurice was the manager of the Met Office's National Meteorological Library and Archive from 1984. He was active in the History Group as a former Secretary and editor of this newsletter. After retirement he authored a number of articles in *Weather* on the historical development of meteorology plus two Occasional Papers. An obituary was published in the August 2024 issue of *Weather*.

RECENT MEETINGS

Eskdalemuir visit, 24 July 2024

For the second year running, Richard Griffith organised a visit to Eskdalemuir Observatory. Taking place on 24th July in relatively fine weather, members of the History Group joined members of the RMetS Scottish Centre and the Climatological Observers Link. The group was also joined by Catherine Ross, Met Office Archive Manager. Over the long history of Eskdalemuir some distinguished persons have worked at the observatory including Lewis Fry Richardson who served as Superintendent between 1913 and 1916. As a long standing synoptic meteorological station, Eskdalemuir participates in measurement of solar radiation, levels of atmospheric pollution, and in chemical sampling.

Visitors were welcomed to Eskdalemuir by Station Manager, Peter Harvey and two presentations followed. The first was given by Gill Taylor-Walker, Met Office Observations Quality Management Team Leader on Observations Quality Management. Chris Turbitt, the British Geological Survey Observations Manager at Eskdalemuir, then explained the seismic and magnetic work the observatory undertakes operating a US standard seismograph and an International Deployment Accelerometer Program long-period sensor. BGS has a broadband three-component seismometer set installed at the observatory and records data from four remote sites transmitted to the observatory by radio link, the others being Lerwick in Shetland, Prudhoe Bay, Alaska and KEP, South Georgia.



The current meteorological observation site (photo: Richard Griffith).

Following lunch, visitors split into two groups and were shown the meteorological site and instruments by Peter Harvey and the British Geological Survey underground instrument chamber and instrument building by Chris Turbitt. We pass on our thanks to Peter, Chris and Gill for their presentations and for hosting us for the day.

With thanks to Richard Griffith for the above information.

RMets National meeting: History of climate modelling, 4 December 2024

Meeting Organiser: Prof. Mat Collins (Exeter University) with Chris Folland. The elegant headquarters of the Royal Society of Chemistry at Burlington House, London was the venue for this meeting.

Evening online meetings 7 October Prof. David Schultz. What do we think we know about the Spanish plume? David reviewed the history of research into the Spanish plume phenomenon by means of a detailed literature review which highlighted a variety of explanations for the plume in terms of synoptic patterns.

FUTURE MEETING

Visit to the Science Museum's meteorological instruments store, 1st April 2025

Over the past couple of years the Science Museum has been moving its holdings of instruments, artefacts and documents from London to a new purpose built facility at Wroughton, just south of Swindon, postcode SN4 9LT. (<https://www.scienceinnovationpark.org.uk/>).

The RMets History Special Interest Group is working with Dr Alexandra Rose (Curator Climate and Earth Science) to help the museum to add information to its Meteorology collection. We appealed for volunteers in a recent e-mail to members and this has resulted in a small group taking part in this venture.

A visit to view the collections has been an aspiration of the History SIG for some years and we have now been offered a date for such a visit, Tuesday April 1st 2025.

The maximum number for such visit would be 25 people – in which case we would be split into two groups. The visit could then cover both meteorology and oceanography and include members of the History SIG of the Challenger Society for Marine Science ([https://www.challenger-society.org.uk/Special Interest Groups](https://www.challenger-society.org.uk/Special_Interest_Groups)). It would also include the viewing of large pieces of equipment. The visit would run from mid-morning to mid-afternoon. If coming by train the Museum has a minibus that can seat up to 8 to collect from Swindon station.

In order to start planning the day it would be helpful if you could indicate by reply to Julian Mayes (history@rmets.org) if you are interested in taking part in this visit.

John Gould

Further evening online meetings will be notified in e-mails.

The Thunderstorm Census Organisation and 100 years of ongoing thunderstorm reporting and research: Part one, the TCO 1924-1945

Jonathan Webb, Tornado and Storm Research Organisation, Oxford

2024 featured anniversaries for two related voluntary meteorological organisations contributing to convective storm research in the UK and Ireland. The Thunderstorm Census Organisation (TCO) was officially established 100 years ago by S Morris Bower. Following Bower's passing in 1981, the Tornado and Storm Research Organisation (TORRO) was invited to carry on the work of the TCO, and TORRO marked its 50th anniversary at a conference in Reading during October 2024.

Meaden (1984), Mortimore (1990) and Prichard (1994) have documented the early history of the Thunderstorm Census Organisation (TCO). As noted by founder S Morris Bower (Bower, 1933), although the Organisation had a start date "towards the end of 1924", it developed from a research initiative into winter thunderstorms, first launched nine years earlier in 1915 by meteorologist (and pioneering weather photographer) Charles Cave, the results of which were published in the Royal Meteorological Society's *Quarterly Journal* (Cave 1923). Indeed, the research into the geographical distribution and impacts of UK and Ireland thunderstorms can be traced back further. The Royal Meteorological Society had appointed a Thunderstorm Committee in 1888, with subsequent analyses of major storm episodes published in the Society's *Quarterly Journal*. The following year, and 30 years after his pioneering initiative, a summary of G J Symons' study of thunder during the three years 1857-1859 was published (Symons, 1889). As noted by Stephen Burt (pers comm), his detailed log of the 1857 storms was published posthumously (Symons 1904). Data collection on (and some analysis of) major thunderstorm episodes had also been carried out even earlier, e.g. by Lowe (1846).

Interestingly, the numerous items from the TCO Archive which were passed to TORRO in 1982 included detailed notes on thunderstorms and (especially) lightning damage which were written up for the seven years 1905-1911 (extract shown in Figure 1). Although the author is not known for sure, it seems most likely to have been Charles Lewis Brook of Meltham whose meteorological records were bequeathed to the TCO on his death in 1939.

June 1910. 62.

Cryotal Palace, May 28th - thunderstorm - afternoon -
 Captain Maitland's balloon drifted. 184.1.1 -
 187.2.1 - 188.2.1 - 189.1.1 -

Chacewater district, May 30 - lightning wrecked
 cottage, evening. 184.1.2 - 185.1.1.

Perranaworthal, May 30 - lightning - evening. 184.1.2
 185.1.1.

St. Stephens-in-Branwell, May 30 - evening - three
 bullocks killed by lightning 184.1.2 - 185.1.1.

Nanjiles, near Bissoe, May 30 - cottage struck
 through iron pipe - narrow escape of owner
 (Whitford) - 184.1.2 - 185.1.1.

Figure 1. Extract from daily notes on lightning-related damage in May-June 1910 (source TCO Archives)

From 1924 to 1929, the TCO concentrated on winter thunderstorms (Figures 2, 3). The survey (like Cave's) was initially restricted to the quarter January to March up until 1926. However, following a presentation and discussion in the *Quarterly Journal* (Bower 1926), the scope was extended to include the whole winter half year (October to March "cool season") from 1926-1927.

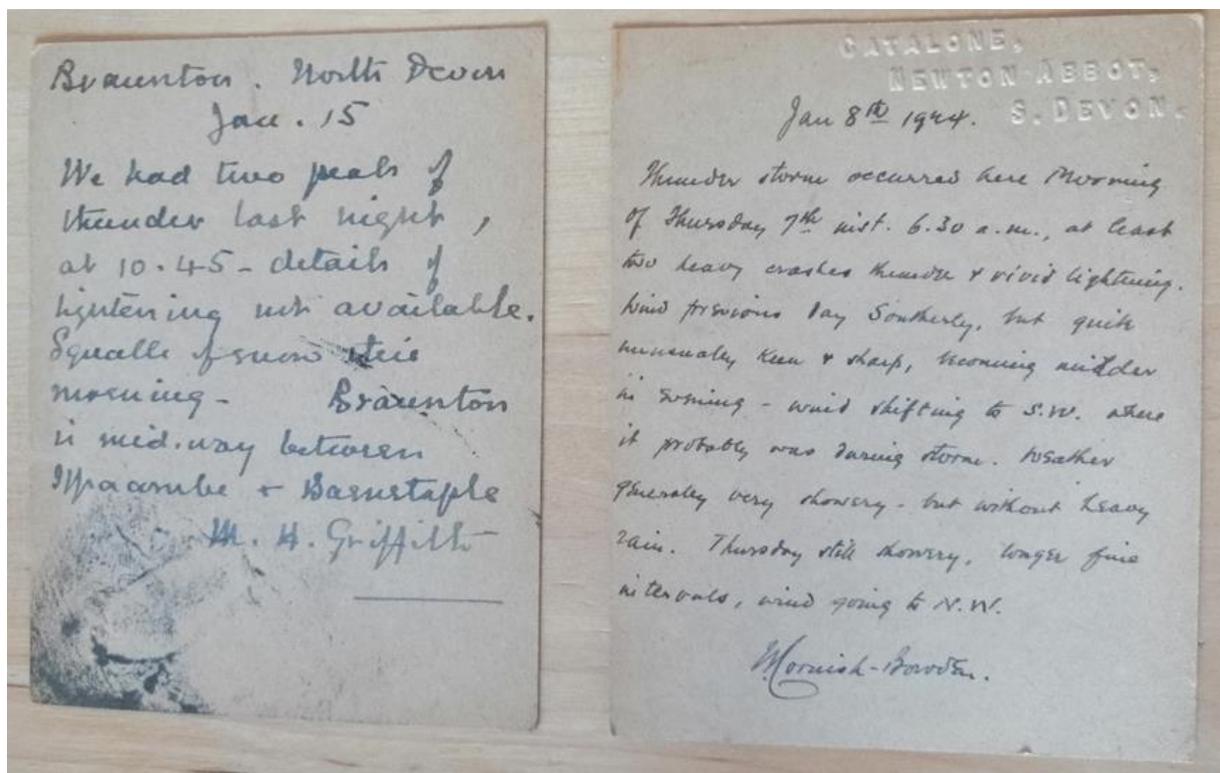


Figure 2. Two of the earliest thunderstorm reports posted to the TCO headquarters, from Devonshire observers in January 1924-1926

1926, May 25th (year) (month) (date) | Cashel (Parish) | 2 (miles) West (direction)
 From Cashel (Town)

DATE OF STORM. PLACE OF OBSERVATION.

REPORT OF THUNDERSTORM.

1. TIME, &c.—Overhead..... Duration about 1 hour
 or Nearest at.....in Direction.....

Time	Direction	Th'nder or Light'ng or both	Estimated Distance
<u>7 p.m. to 8 p.m.</u>	<u>NW.</u>	<u>Lightning (sheet)</u>	

2. SEVERITY.
 3. WEATHER. Light cloud. Day bright, but rain next morning.
 4. WIND. S.W. Moderate (about Force 3)
 5. TEMPERATURE. Mild. Extremes during Day 36° to 51°

Signature of Observer E. W. Montagu Murphy
 Postal Address Ballinamona, Cashel Co. Tipperary Date 28/1/1926

(Please leave above storm diagram blank)

Figure 3 Early (1926) TCO Thunderstorm Report from Co Tipperary, Ireland. using an early version of the TCO report cards

From 1931, the survey switched focus to the ‘warm season’ (April-September) and detailed ‘Summer Thunderstorms’ reports were published for 1931-1934. During 1934, data collection was extended to the whole year after firm evidence from the surveys that some parts of the country, for example the Scottish Islands, had most of their thunder in the winter. The subsequent Annual Reports for 1935, 1936 and 1937 have been the most detailed TCO reports published. A supplement was issued with a full list of observers, confirming the peak activity of the organisation in the 1930s.

Indeed by 1937, there were 3077 voluntary observers and organisations contributing lightning and thunderstorm observations. Many of these observations were recorded on pre-printed postcards and sent to Morris Bower who coordinated the network (and who also ran the Met Office Auxiliary Climatological Station at Huddersfield-Oakes). Many observers also made generous financial donations to enable the work to continue. The reports provided important insights into the spatial and seasonal distribution of thunderstorms in the United Kingdom and Ireland. Although the emphasis of TCO observers was on the timing and duration of thunder and lightning, they were encouraged to include notes on the impacts (local damage, injuries, deaths) caused by lightning and other thunderstorm-related phenomena such as intense rainfall, strong winds, large hail and tornadoes. Elsom and Webb (2016) described the pioneering work on lightning damage which the TCO engaged in during the 1930s and which established a key research area for TORRO to follow up on from the 1980s onwards. As well as encouraging observers to send in press reports of damage, the TCO subscribed to a press cutting agency (TORRO later subscribed to a press cutting agency for tornadoes and hail in the 1980s-prior to the arrival of internet search facilities!).

One of the projects that the TCO undertook was a four-year survey of the incidents when trees were struck by lightning in the United Kingdom and Ireland (Dark and Bower, 1938); this special

research from 1931-1934 involved submitting detailed forms, with supporting photographic evidence if available (see Figure 4).

There were 164 tree incidents recorded, and the species struck (and sometimes set alight) most frequently were oak (37%), elm (20%), ash (16%), poplar (8%) and Scots pine (6%). In some incidents, the lightning left no evidence, while in others it left scorched scars, mostly straight but with a few spiral. The bark along these strips was ejected explosively because the sap was heated intensely and then expanded and vapourised. The survey revealed that birch, holly, hornbeam and horse chestnut were not known to have been struck, and there was only one known incident involving beech. One of the conclusions from this limited survey was that smooth-barked trees were less frequently struck than rough-barked ones although a caveat was that smooth-barked trees, especially when wet, may not show evidence of a lightning strike. It was recognised that a much more comprehensive survey was needed in the future, in order to reach firm conclusions. The study stressed the danger of anyone standing near a tree during a thunderstorm by highlighting that 'at least 4500 insured animals' were killed annually (in the 1930s) while sheltering under solitary trees in the United Kingdom and Ireland.

The more recent TORRO lightning database (1988 onwards) contains regular reported incidences of trees being struck. While the species is not always known, there is enough data over the 30+ years for some analysis; of the incidents where the type is known, 54% were oak.

near CHOBHAM, SURREY, on 23rd May, 1933.

1. <u>Name of Recorder.</u>	W.J. Taylor, A.F.R.Ae.S.
2. <u>Address of Recorder.</u>	"Sherborne", Ash Vale, Surrey. B163.
3. <u>Introductory.</u>	Four trees were struck near this village situated as indicated in fig.I. One tree (the most interesting) is described in this report. The other trees were similarly situated in similar fields, but the damage in these cases consisted of slight superficial grooving of the bark.
4. <u>Date of storm.</u>	23rd May, 1933.
5. <u>Time when struck.</u>	About 7.0 p.m., Uncertain.
6. <u>Wet or dry.</u>	Doubtful, probably wet.
7. <u>Species of Tree.</u>	Oak (Common English).
8. <u>Height of Tree.</u>	30 ft.
9. <u>Girth of Tree.</u>	3 ft.
10. <u>Situation.</u>	1/2 mile north of Chobham, Surrey, and 1/2 mile east of the Woking-Chobham-

Figure 4a. Questionnaire-style form submitted; lightning strike to tree in 1933.



Figure 4b. Photograph of incident reported in Figure 4a.

Publication of case studies of outstanding thunderstorm events followed on from those published by the Royal Meteorological Society and in Symons *Met. Magazine* in the 1880s and 1890s and were subsequently followed up by TORRO from the later 1970s. For major events (“groups of storms”), detailed analysis of storm tracks and movements were plotted and reproduced in the 1930s TCO publications. Figure 5 shows one of the two plotted maps the TCO published for the extensive severe thunderstorms on 25 June 1935 (when over 100mm of rain fell in the Bath area). Another example from 1935, relating to the great hailstorm of 21-22 September (which especially affected Northamptonshire and Huntingdonshire), is published in the same annual report.

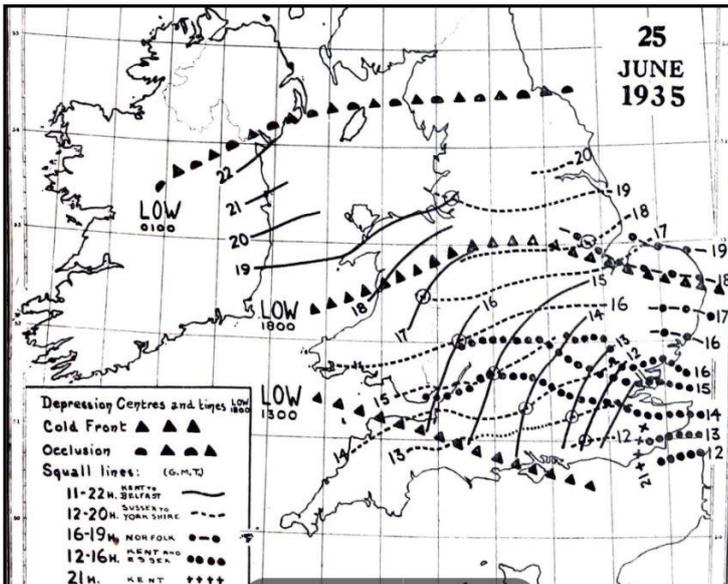


Figure 5. Movement of storms on 25 June 1935, and corresponding Met Office frontal analysis (from *British Thunderstorms 1935*).

In June 1936, thunderstorms were exceptionally widespread and severe over England and Wales on the 19th, 20th and 21st with a remarkable 600 to 700 lightning damage incidents reported in Britain and Ireland. Indeed, the TCO Annual Report for 1936 records that these days all had overhead thunderstorm activity covering more than half of England and Wales; the areal coverages for the three days were 82%, 70% and 52% respectively. During June 1936, the National Grid reported 76 power system breakdowns due to lightning, the highest monthly incidence between 1934 and 1947. At Kew Observatory, eight separate thunderstorms were recorded between the 18th and 21st. Figure 6 shows one of the damage log cards (nowadays these might be described as ‘weather impacts’ logs) for 19 June (there were 21 cards for that day) with lightning damage (⚡), large hail (▲) and flood damage (FD) reported.

1936 JUN 19 G.D. (ctd.) Card no 9.

↳ Maidenhead, 'Farnah Colage' - vacant. Blue ball of flame went to curb in middle of road. Workmen in house - in Wotclark, 77 Garden Colage and in Wotclark, 18 Grove Road.

↳ Maidenhead hitting valuable houses of Holyport Riding School, while sheltering under some Ts. Green in Wotclark. Value approx £200 each.

↳ 20ft Stone Column in Canisbrooke 1.0. W Cemetery apparently at same time as flagstaff in Centre and also a T (Cedar) in Curators garden. (See photo)

Damage to T₊ Blashwater Hollow. ? T only.

↳ h Ventnor - 1. Boniface Road.
2. Whitwell Road.

FD Ventnor houses and park.

8h ▲ 1" diam. blown by high wind near DAM along Maygate front. It blew down a beech in a garden.

Figure 6. One of the thunderstorm damage cards logged by the TCO for 19 June 1936.

The outstanding event of 1937 occurred on 15 July as a thundery depression crossed England, with the hourly progression of storms plotted in Figure 7. More than 125mm of rain fell around the Leicestershire/Lincolnshire border.

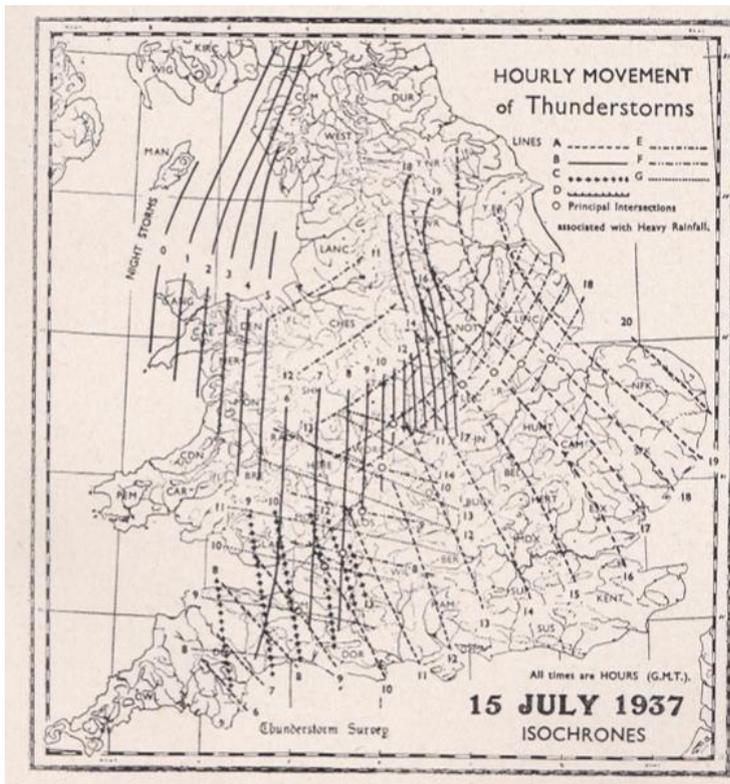


Figure 7 Thunderstorms on 15 July 1937.

Great West Country storm, 4 August 1938

An example of the effectiveness of the TCO was its ability to document well over 200 damaging lightning incidents caused by severe thunderstorms centred on Devon on 4-5 August 1938

(Figures 8, 9). More than 150mm of rain fell in Torquay and south Dartmoor (see *British Rainfall*).

65 incidents of significant lightning damage were reported across Devon alone during a 12-hour period on the 4th with a total of 175 such incidents across England and Wales in the 24-hour period and 222 incidents over Britain and Ireland in 36 hours. A typical newspaper report describing the Devon storm remarked: "Many of those who thunder terrifies hid in cupboards or other dark places"!

Station No. 553

Date of Storm. 4. 8. 38 Observed from station
 1938. August 4th. No. E. 523. Paignton.

 Remarkable Thunderstorm.

4. 8. am. Woke to almost continuous lightning & thunder. Storm appeared to be SW and W. of Paignton, distant about four miles, and moving slowly to N.
 4. 30 Rain commenced. Extreme gloom & darkness over the land, but seaward the horizon was clear with yellow & pink dawn & sunrise - rapidly obscured by cloud from N.
 5. am Short period of heavy rain; storm seemed to be abating and passing away to N.
 5. 45. Storm working round from SE and resumed.
 6. 5. Very violent.
 7. 10 Hard wind from NE with hail and very heavy rain. Prior to this there had been very little wind, though a considerable sea swell was running from E. NE breeze blew freshly till about 8. 30, after which it died away and was variable, or calm, for rest of the day.
 9. 30 to 10 am Storm overhead and practically continuous with enormous rainfall.
 10. 15. Slight abatement, with shift of wind to SE
 10. 30 Resumed with apparent greater violence. Overhead.
 11 45. Rained ceased, slight fall in temperature.
 12. 25 } Rain and thunder resumed, gradually lessening until storm passed away to N. about 2. pm.
 non }

Rainfall at Paignton measured 4. 70 inches. At Torquay 6. 40 inches.

Lightning flashes were mainly vertical; at times two, three or even four flashes could be seen simultaneously.

About 6. 30 I noticed a pear-shaped flash, or fireball, come down behind the Churston hills - about a mile to the south of me.

Extensive flood damage throughout the district. Many telephones put out of action. Bell was frequently by lightning until apparently the instrument ceased to function or exchange broke down.

Arthur J. Roberts
 5. 8. 38.

Figure 8. Detailed report on the historic West Country thunderstorm event of 4 August submitted by the observer in Paignton, Devon. Note, for especially severe events, some observers preferred to report more fully in letter form instead of using the standard cards.



Figure 9 Spectacular cloud to sea lightning observed from Woolacombe, north Devon, early hours of 4 August 1938. Photo originally by Richard CJ Sanders, first published in *British Thunderstorms 1934-1937* by S. M Bower, Thunderstorm Census Organisation, Huddersfield, 1947.

Because of the Second World War, the 1936-1937 TCO reports were not published until 1947. During the war, Bower served in the Met Office at several RAF stations and no TCO reports were published for the years 1938 to 1945. However, much material was still collected under the Directorship of his wife, Florence Bower. Many original TCO observations for this period were passed to the TORRO archives and have enabled the preparation of detailed 'historical' case studies of some individual events such as over Devon on 4 August 1938 (Webb, 2013 and 2016) and in the Peak District on 29 May 1944 (Doe and Brown, 2005). From 1935 (including the war years), reports of lightning damage, flood damage, severe local winds and hail were logged on a card system (Figure 6). There are also extensive surviving press cuttings (some from observers, others from a press clipping agency), especially for 1938.

TCO Seasonal and Annual Thunderstorm Reports from 1926 to 1937 are available via the TORRO web site at <https://www.torro.org.uk/research/thunderstorm-observer>

Part Two of this article will describe the work of the TCO, and associated thunderstorm research, during the post-war period from 1946 to 1974.

References

Bower, M (1926) Report on winter thunderstorms in the British Islands from January 1st to March 31st 1925. *Quart. J. Royal Meteorol. Soc.*, 52(220): 405-414.

Bower, M (1933) Summer Thunderstorms: Second Annual report, 1932.

Cave, C. J. P (1923) Winter Thunderstorms in the British Islands. *Quart. J. Royal Meteorol. Soc.*, 49, 43-52.

Dark, S. T and Bower, S. M (1938) Report on Trees Struck by Lightning. *British Thunderstorms*, 1935. Thunderstorm Census Organisation, Huddersfield, UK.

Elsom, D. M and Webb, J. D. C (2016) Lightning Impacts in the United Kingdom and Ireland, in *Extreme Weather: Forty Years of the Tornado and Storm Research Organisation (TORRO)*. RK Doe (ed.). John Wiley & Sons: Chichester, UK.

Doe, R. K. and Brown, P. R. (2005) A sea on the moors. *J. Meteorol.*, 30 (299), 163–173. <http://www.ijmet.org/wp-content/uploads/2015/04/299.pdf>

Lowe, E. J (1846) *A Treatise on Atmospheric Phenomena*. Edward Joseph Lowe. Longman, Brown, Green, and Longmans, 1846.

Meaden (1984). The early years of the Thunderstorm Census Organisation. *Journal of Meteorol* 9, 310-313. <http://www.ijmet.org/wp-content/uploads/2018/10/94.pdf>

Mortimore, K.O. (1990) Thunderstorm climatological research in Great Britain and Ireland: a progress report and aims for future study. *Weather*, 45, 21–27. <https://doi.org/10.1002/j.1477-8696.1990.tb05038.x>

Prichard (1994) The Genesis and Development of Thunderstorm Reporting. *Journal of Meteorol* 19, 295-298. <http://www.ijmet.org/wp-content/uploads/2016/05/193.pdf>

Symons, G. J., 1889: Results of an investigation of the phenomena of English Thunderstorms during the years 1857–59. *Quart. J. Royal Meteorol. Soc.*, 15, 1-13. doi 10.1002/qj.4970156901.

Symons, G. J., 1904: Report on the thunderstorms of 1857. *Quart. J. Royal Meteorol. Soc.*, 30, 29-40. doi 10.1002/qj.49703012903.

Webb, J. D. C. (2013) The phenomenal West Country Thunderstorm of 4 August 1938. *Int. J. Meteorol.*, 38, 206–218. <http://www.ijmet.org/wp-content/uploads/2020/11/IJMET-381.pdf>

Webb, J. D. C. (2016). Epic Thunderstorms in Britain and Ireland, in *Extreme Weather: Forty Years of the Tornado and Storm Research Organisation (TORRO)*. RK Doe (ed.). John Wiley & Sons: Chichester, UK.

Distinguished Voices Podcast

The latest podcast to have been recorded is the interview of Prof Chris Folland carried out by Prof John Mitchell. This completes their exchange of interviews in which Chris reflects on his notable career in which he led research in climate change. Society members can listen to any of the podcasts here <https://www.rmets.org/distinguished-voices>.

Correction: apologies for the error in John Mitchell's name in the last newsletter.

Why Stagg wrote *Forecast for Overlord - 6 June 1944*

Brian Booth, Devizes, Wiltshire

Note: All times quoted are Double British Summer Time (DBST) which in 1944 was GMT+2.

James Stagg's account of the forecast for D-day, Operation Overlord, is reasonably well known, certainly by those of a certain age. Operation Overlord was the codename for the Battle of Normandy, the initial phases of which were the airborne and amphibious assaults on the Normandy beaches during early June 1944. Although initially planned for the 5th, a forecast of adverse weather resulted in the assaults being postponed for 24 hours.

For operational reasons forecasts were required a period of five days centred on D-day itself to allow for the positioning and transport of troops and supplies by land and sea from northern locations to be in position to cross the English Channel during the night of 5-6th June, and for initial re-supply following the establishment of the bridgehead. In an era when the technique for producing forecast charts was based largely on continuity, accurate forecasts could only reasonably be expected for 24 hours, a forecast for five days was unheard of.

The Chief Meteorological Advisor to the Commander in Chief of the Allied Expeditionary Force, General Dwight Eisenhower, was Group Captain James Stagg. Based at Eisenhower's Advanced Headquarters at Southwick Park near Portsmouth from the 29th May, Stagg's role during the crucial period was to brief Eisenhower and his Chiefs of Staff at 21.30 DBST on the 2nd, 3rd and 4th of June, and again at 4.15 DBST on the 4th and 5th. The forecast was one agreed by three teams of meteorologists representing the Meteorological Office, the American forces and the Admiralty, known respectively as Dunstable, Widewing and Admiralty (collectively known as the Centrals), shortly before Stagg stood before Eisenhower.

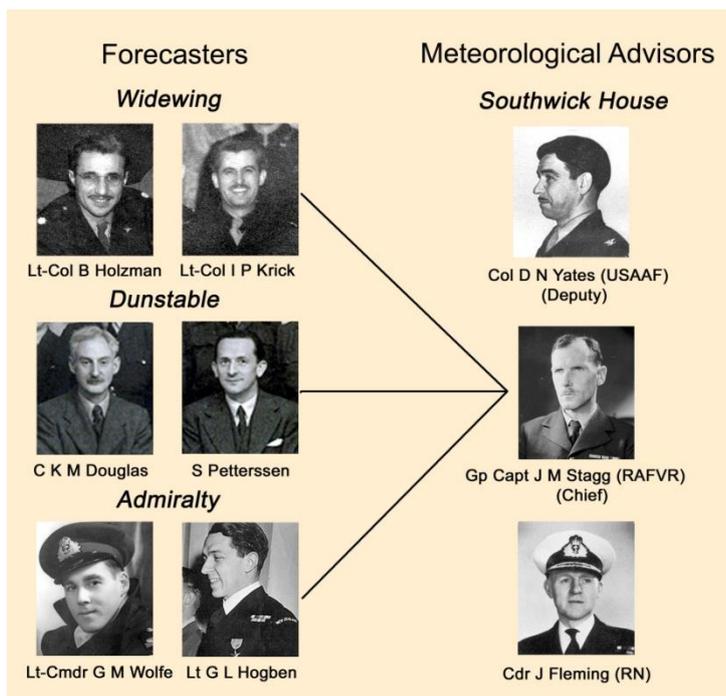


Figure 1. The principal meteorologists involved in discussions for the D-day forecast. All had been associated with project since trial forecasts, to determine their ability to forecast for five days, began in February 1944. Colonel Yates and Instructor Commander Fleming held watching briefs, although the former, as Stagg's Deputy, sometimes stood in for him.

Having no staff himself, and dependent on charts produced by the small Admiralty meteorological office

at Southwick for an impression of developments, Stagg was reliant on the regular conferences he chaired between the Centrals, usually at around 07 DBST, 05 DBST and 08 DBST daily to reach an agreed forecast (Figure 1). Dunstable (C K M Douglas and S Petterssen) and Admiralty (Instructor Lt-Commander G M Wolfe and Instructor Lt G L Hogben) had little faith in their ability to forecast much beyond 24 hours, but Widewing (Lt-Colonels I P Krick and B G Holzman) argued strongly that their forecasts, based on an analogue technique developed by Krick, were very accurate and consistently predicted fine weather for the 5th, whereas the other Centrals favoured unsettled conditions. Also listening to the discussions were Stagg's deputy, Colonel Don Yates, USAAF, and Instructor Commander John Fleming, RN¹. Unsurprisingly the conferences became heated, leaving Stagg in a difficult position when preparing his presentation.

None-the-less Stagg's final briefings during the night of 4-5th June held sufficient promise for the invasion to proceed on the 6th and the rest, as they say, is history.

Post-war

In the immediate aftermath of the war the meteorologists, with one exception, said little about the parts they'd played in the events of June 1944. The exception was Krick about whom a steady stream of articles were published claiming the success of D-day was solely down to his technique (King, 1950). Many others followed until on 3rd January 1960 the Science Correspondent of the *Observer* newspaper, John Davy, wrote an article about Krick, not only describing his remarkable technique for forecasting for extended periods, sometime years ahead, but also how he had been solely responsible for the successful D-day forecast. To add interest Davy also included Krick's forecast map for a week's time, the 9-10th January 1960.

Highly incensed by the article, Douglas² challenged Davy, explaining how Krick's claims were false; Davy was having none of it, insisting Krick had a right to be heard. Douglas copied his correspondence to Stagg³, who replied that he had become immune to Krick's claims to be the saviour of D-day. Others had sent him excerpts from articles and books over the years, mostly published in the US and Canadian press, and Petterssen had even begged him to intervene on behalf of the others who had contributed to the D-day discussions. At the time Stagg had been Director of Services for a number of years, to say nothing of being an active member of several external bodies, and this was reflected when telling Douglas:

At almost every stage when a new version has appeared I have wanted to get down to writing a rebuttal; but pressure of other jobs, uncertainty as to how best to achieve a counter-argument and particularly where best to have it published so it can come before people who should see it, and possibly also a basic dislike of entering into public argument with a man like Krick - all these have put me off.

Forecast for Overlord

Stagg eventually wrote his version of events, *Forecast for Overlord*, after his retirement in 1960 (Stagg, 1971). On completing the draft during the winter of 1968-69 he sent copies of the book to both Douglas and Ernest Gold, who had been Deputy Director of the Meteorological Office

during the war. His covering letter, written on 3rd February 1969, explained why he had been prompted to put pen to paper:

I have grown tired of being regarded as the passive go-between in transmitting the views of the experts to the SAC (Supreme Allied Commander); and I am also weary of being described as the man who held back the invasion by one day. Given if that were true that was the easiest part of the job. The real contribution which meteorology made to the success of the operation was in guiding the SAC to use the interlude on Monday night-Tuesday. I hope I have made that clear.

I don't know where or how I shall get the thing published, but whatever happens to it I shall be happy to have your frank comments.

He was surprised at their responses, especially Gold's. Replying to Douglas's comments in a letter dated 18th March Stagg wrote:

.... I also took it that the comments in your letter were just your off-the-cuff comments, not to be seriously considered for insinuating into the story.

Unfortunately a copy of Douglas's letter has not survived, so we will never know what his thoughts were. However Stagg was clearly incensed with Gold's response, and continued:

He has replied with 13 big pages of closely typed, detailed points of comments and criticism. Among the many points he has raised he has made it clear he dislikes my references to Krick and Petterssen. He wants it toned down, e.g. with expressions of excuse for Petterssen's irritating manner introducing his contributions to the discussions.

Stagg then asks Douglas for his recollection of the reason why Petterssen was engaged by the Meteorological Office:

I say 'Dr Petterssen, a Norwegian meteorologist who had recently held an academic post in the USA, was invited into the British service to take charge of a unit at Dunstable whose job it was to explore and exploit the use of this new upper air information in making forecasts for 2, 3 or more days ahead.'

Gold's comment on that is '*Petterssen arrived in this country from France to offer his services to the M.O. and was accepted and sent to help the Forecast Division, of which Bilham was Head, in any way possible. I did not think a special unit was set up, nor that there as any specific instruction to explore and exploit the use of the new upper information for making forecasts for 2, 3 or more days ahead.*'

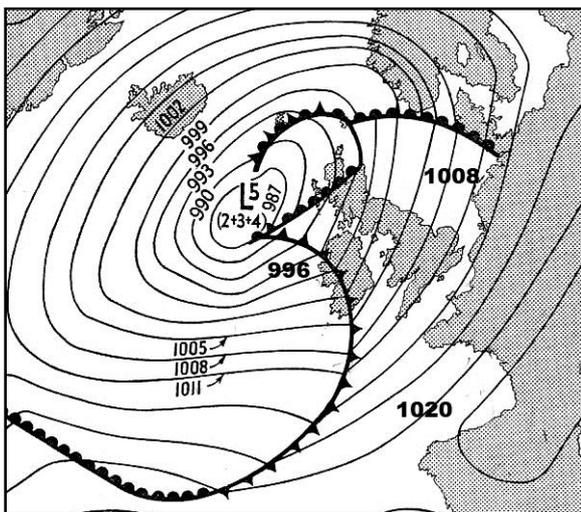
After continuing for several more sentences Stagg asks Douglas whose recall is correct, his or Gold's. While Douglas's reply has been lost, it is impossible he would have sided with Stagg since he had worked alongside Petterssen from 1943 when Petterssen was head of the Upper Air bench and Douglas was Head of the Surface Bench in the Central Forecast Office and extended forecasts were not included in their mandates,. Gold was the man who placed Petterssen in the post and knew very well it did not include work on extended forecasts!

In the event Stagg appears to have ignored all the advice offered across a whole range of points and, in so doing, did not win himself any friends amongst his wartime colleagues. His book complained about the American Widewing forecasters, essentially dismissed the Admiralty forecasters as unimportant, accused Instructor Commander John Fleming of disloyalty and repeatedly complained about Petterssen's manner.

Petterssen was incandescent on reading Stagg's comments and, when writing his own autobiography, included an appendix of letters between himself and Stagg demanding to know what grounds he had for claiming that Petterssen was included in the team solely because of his expertise with extended forecasts. Stagg still refused to accept his error. A Norwegian version of Petterssen's memoir, *Kuling Fra Nord (Gale from the north)* was published during 1974. The English translation of the book, published as *Weathering the Storm*, did not appear until 2001.

For all its value in describing the basic scenario Stagg lets himself down by drifting into fantasy at times, possibly the most notable instance being his description of events after his crucial briefing at 04.15 DBST on 4th June, the briefing which led to D-day being postponed for 24 hours. According to *Forecast for Overlord*, after going to bed at dawn on the 4th (about 05 DBST) Stagg woke some three hours later and, after breakfast, telephoned his aide at Widewing, Squadron Leader George D Robinson, to be told 'Yes, a cold front has appeared from somewhere; it is already across Ireland and is moving quickly eastwards.'

Although Stagg makes no reference to events that morning in his handwritten diary⁴, his typed official diary in the National Archives records he enjoyed five hours sleep after going to bed at dawn, and did not contact Robinson until 13.10 DBST. Their conversation was about a completely different subject, no reference apparently being made to the latest weather situation⁵.



What makes Stagg's claim incongruous is that the analysis for 1300 GMT (1500 DBST) in his book bears no relation to his claim - the cold front having not long reached the west coast of Ireland, Figure 2.

Figure 2. Extract of the surface analysis for 1300 GMT, 4 June 1944, from Figure 5 of 'Forecast for Overlord'.

Robinson, during an interview by Earl Droessler for the American Meteorological Society in 1994⁶, claimed to have remembered the conversation

but used subtly different words:

A cold front has turned up from somewhere and it's halfway through Ireland.

That description only holds if the conversation took place after 1300 GMT (1500 DBST i.e. mid-afternoon). Which begs the question as to why hadn't Stagg visited the Admiralty meteorological office at Southwick to keep abreast of events if they were so important?

Why Stagg elected to include the alleged incident about the cold front must remain one of the great imponderables, unless it was to add some drama for non-meteorological readers. The incident, if it occurred, would have played no part in the story as the next conference between the Centrals was not until 1630 DBST, while that for Eisenhower was not scheduled until 2100 DBST.

The trigger

To return to the probable trigger of Stagg's book, *The Observer* article of 3rd January 1960 and Krick's forecast for 9-10th January. Essentially Krick's forecast map showed low pressure extending across the North Atlantic and into western Europe (Figure 3); some might consider it a reasonable attempt. In reality it failed to identify not only an intense depression of 955 mb in mid-Atlantic but also a large anticyclone of 1034 mb over the United Kingdom (Figure 4), not the greatest of advertisements for Krick's products.

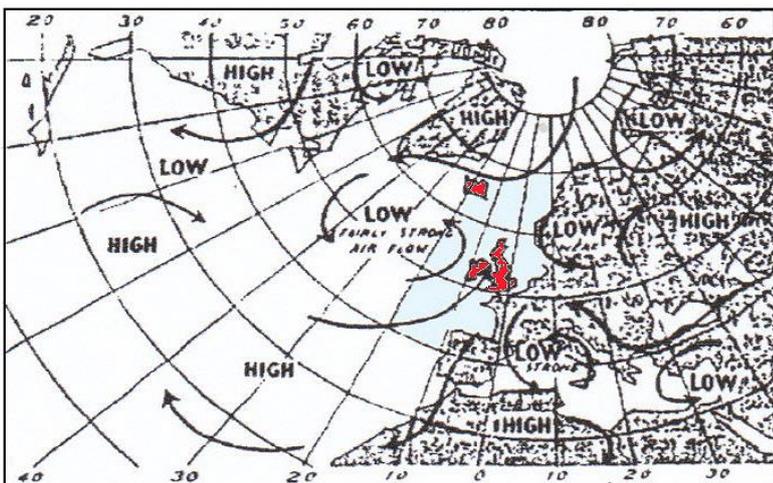


Figure 3. Krick's forecast chart for 9-10 January 1960 as published in *The Observer* newspaper on 3rd January. (With permission of Roger Tooth, *The Observer*, 9 November 2016)

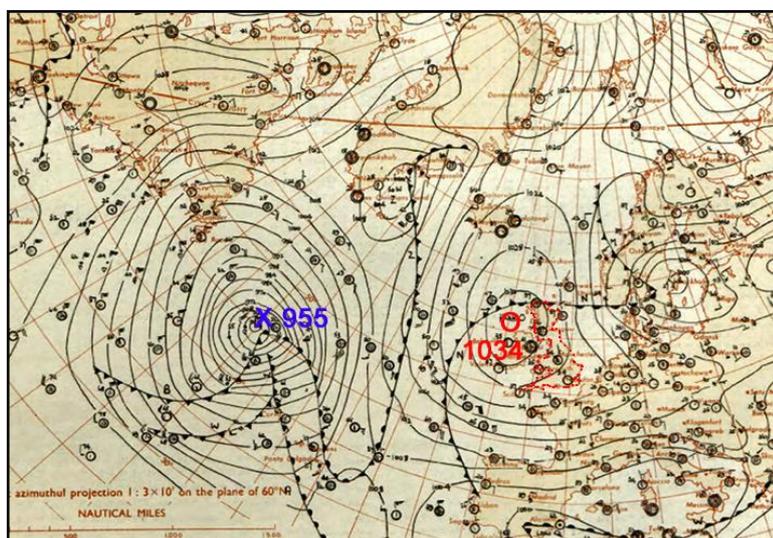


Figure 4. Actual chart for midday on 10th January 1960. Note the large anticyclone over the British Isles, and intense mid-Atlantic depression, neither of which were anticipated shown by Krick's forecast. (Meteorological Office)

Notes

1. Instructor Commander John Fleming was the Staff Meteorological Officer to Admiral Sir Bertram Ramsey, the Allied Naval Commander in Chief of the Naval Expeditionary Force. The RN meteorological office at Southwick was established for Fleming's role. (I have an unpublished copy of Fleming's memoirs).
2. I have copies of Davy's letters, provided by Douglas's late son, also Charles Douglas.
3. Copies of Stagg's correspondence are held by the National Meteorological Library and Archives.
4. Stagg's handwritten diary for 1944 is held by the National Meteorological Library and Archives
5. National Archives file AIR 37-1124A
6. Interview of George D Robinson by Earl Droessler on June 27-28 1994: <https://opensky.ucar.edu/islandora/object/archives%3A7633>

References

- King, S. 1950. *Weather Wizard*. Readers Digest, 09/1950, p76.
Petterssen, S. 1974. *Kuling Fra Nord: En vaervarslers erindringer*. Aschehoug.
Petterssen, S. 2001. *Weathering the storm*. American Meteorological Society.
Stagg, J. 1971. *Forecast for Overlord – 6 June 1944*. Ian Allan.

BBC commemorates the centenary of broadcasting the Shipping Forecast

On 1 January 2025 BBC Radio Four devoted much its airtime to tributes to the shipping forecast. In case you missed some or all of the programmes they are available until the end of January on BBC Sounds (https://www.bbc.co.uk/sounds/schedules/bbc_radio_fourfm/2025-01-01). The day started with *The Shipping Forecast: A beginner's guide* at 0900. This featured the Met Office Archivist (and History Group committee member) Dr Catherine Ross explaining the origins of the service following the sinking of the Royal Charter in 1859.

So what about the centenary? This was the anniversary of the BBC broadcasting the shipping forecast through the opening of its long wave transmitter at Daventry. A particular highlight of the programme is the attempt to recreate the first broadcast of 4 July 1925. The programme then details the changes to the forecast areas over the years. The later programme *Sea Like a Mirror* takes us evocatively through the Beaufort Scale and its effects – well worth a listen. Over the whole day, an imaginative selection of programmes – just what Radio Four is for.

The Sledge Patrol

Alan Heasman, Aldbourne, Wiltshire

Some readers in the UK may have recently read one of Paul Simon's daily weather articles in *The Times* about a little-known episode of 'weather watching' during the Second World War (WW2).

In 1942 both the Allies and the Germans were desperate for additional weather information from the extreme North Atlantic and in particular the area between East Greenland and Northern Norway. This was because convoys from North America and Britain were either crossing the Atlantic or leaving UK waters to pass through the Norwegian and Barents Seas, heading for Russia who had joined the Allies. After Germany had occupied Denmark, Greenland stopped broadcasting regular weather reports in international code from their four weather stations. Instead, they reported using a cypher code, allegedly known only to the British and Americans. The Germans reacted by trying to establish their own weather stations on various remote sites on Greenland and in particular on the inhospitable northeast Greenland coast. Foreseeing this, the Danish Governor of Greenland established the Northeast Greenland Sledge Patrols. Their task was to patrol that northeast coast by dog sledge and bring the first possible news of any German landings which would then be dealt with by either the British or American forces. Greenland was effectively neutral in WW2 and in fact, until then, no known armed conflict of any sort had taken place in history in Greenland. The native Eskimos and other non-native inhabitants lived in peace and they were keen to keep it that way.

In late summer 1942, a German expedition managed to establish a weather station in Hansa Bay on Sabine Island in eastern Greenland. There were 19 men on site led by Lieutenant Hermann Ritter, a regular German Navy officer who had previous Arctic experience. Born in Austria, he was not a supporter of Nazism, but he was required to fight for Germany. The men under his command were a mix of meteorologists and soldiers. They reported weather in their own German cypher code back to Germany and this assisted the German navy in attacking Allied shipping heading for Russia.

For six months the German weather station remained allegedly undetected by the Allies and the Greenland authorities, though one might speculate that the German weather reports might have been decrypted by the Allies to their advantage. In the Spring of 1943, after the depths of the Greenland winter, one of the Greenland sledge patrols set out to check the 500 miles of rugged coast northwards from a small settlement named Eskimoness. The patrol consisted of Marius Jenson, a Dane who had hunted in Greenland before the war and two local Eskimo. Within a few days and much to their surprise and shock they found signs of life at an old hunters' retreat on Sabine Island. What followed was one of the strangest 'battles' of the war. The sledge patrol had all the skills of Arctic navigation and dog driving on their side but were pitted against well-armed Germans who lacked dog teams and Arctic skills. I will not cover the details of the outcome here because it would spoil the story for those who might wish to read it at first-hand.

Paul Simon's article, necessarily limited by the space available in *The Times*, neatly sketched the whole story and the outcome but for a full and factual account complete with maps and photographs, David Howarth's 250 page book entitled '*The Sledge Patrol*' makes for fascinating reading. It was published originally long ago in 1957 but has been re-published more recently in 2018. Both editions are readily available from new and second-hand book sources such as Amazon and AbeBooks UK.

Writing relatively soon after WW2, David Howarth had the advantage of being able to communicate with many of the people involved in the story and from their recollections, he pieced together the whole story. It makes great reading.

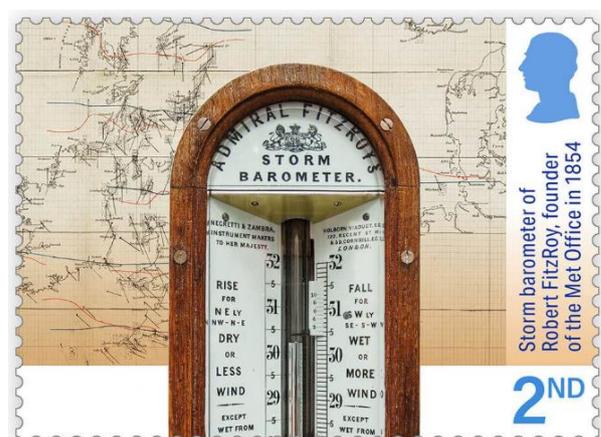
Stamps commemorating weather forecasting on the 170th anniversary of the founding of the Met Office

In 2024 the Royal Mail issued a set of eight stamps and associated commemorative items to mark the 170th anniversary of the founding of the Met Office. The subjects of the stamps are;

- Luke Howard
- Robert FitzRoy's Storm barometer
- The Terra Nova expedition 1910-12
- Centenary of the shipping forecast (and image of a marine buoy)
- Weather observer at a Stevenson screen (to commemorate the role of observations at the 80th anniversary of D-Day).
- Rainfall radar
- 50th anniversary of the first female BBC TV weather forecaster appearing on-screen – Barbara Edwards
- Supercomputers and satellites.

A set of attractive postcards of the stamps and an information folder are available as well as the stamps. These items are still available to purchase -

<https://shop.royalmail.com/special-stamp-issues/weather-forecasting/weather-forecasting-stamp-set>



Recently published articles of historical interest

Members may remember a similar listing was kept by Malcolm Walker in this newsletter for several years. Since that time several things have changed; RMetS members have access to the archives of all journals published by the Society, most of which are Open Access. In addition, the provision of links to the online copies of articles means that they can be accessed almost instantly – as long as you are logged in the RMetS website. Occasional articles from other journals may be included here as long as link can be provided to Open Access versions of the respective papers; the coverage of data rescue by the *Geophysical Data Journal* is notable and is one of the reasons for starting this list. The first listing (below) starts from mid-2023 and runs until the end of 2024.

Articles in *Weather*

We start with the full set of references to the recent series of articles on the history of UK weather forecasting; Martin Young and Nick Grahame (2023) The history of UK weather forecasting: the changing role of the central guidance forecaster.....

Part 1: The pre-computer era, *Weather*, 77 (10), 344-48. <https://doi.org/10.1002/wea.4217>

Part 2: The birth of operational numerical weather prediction, *Weather*, 78 (1), 4-9. <https://doi.org/10.1002/wea.4216>

Part 3: Cumulative progress in forecasting – the 1970s, *Weather*, 78 (3), 68-74. <https://doi.org/10.1002/wea.4276>

Part 4: Windstorms, snowstorms and further technological developments, *Weather*, 78 (4), 96-101. <https://doi.org/10.1002/wea.4277>

Part 5: Rapid advances in the forecasting process – the late twentieth century, *Weather*, 78 (9), 254-60. <https://doi.org/10.1002/wea.4359>

Part 6: The late twentieth century: forecasting smaller-scale features, *Weather*, 78 (11), 304-312. <https://doi.org/10.1002/wea.4370>

Part 7: Operational forecasting in the twenty-first century: graphical guidance products, risk-assessment and impact-based warnings, *Weather*, 79 (3), 72-80. <https://doi.org/10.1002/wea.4488>

Part 8: Operational forecasting in the twenty-first century: enhanced capabilities from nowcasting to extended range, *Weather*, 79 (5), 148-157. <https://doi.org/10.1002/wea.4497>

Part 9: The changing role of the central guidance forecaster. How has the role of the guidance forecaster changed? An overview and a look ahead, *Weather*, 79 (9), 294-299. <https://doi.org/10.1002/wea.4559>

Other articles in *Weather* (in date order)

Andrew Sibley (2023) History of weather observing sites in the Cambridge area from the mid-nineteenth century to the present-day, *Weather*, 78 (8), 212-221. <https://doi.org/10.1002/wea.4346>

Pietro Piana and Francesco Faccini (2023) The 'Deluge' of 5 October 1822 in Genoa, Italy, *Weather*, 78 (9), 240-245. <https://doi.org/10.1002/wea.4388>

W. John Gould (2023) Pen Portraits of Presidents – Prof. Henry Charnock, CBE, FRS, *Weather*, 78 (10), 294-298. <https://doi.org/10.1002/wea.4467>

Alessandro Fuccello and Sergio Stefanini (2023) Dante and meteorology, *Weather*, 78 (11), 315-321. <https://doi.org/10.1002/wea.4441>

Jim Galvin and Frank Le Blancq (2023) Marc Dechevrens, Jesuit meteorologist 26 July 1845 - 6 December 1923, *Weather*, 78 (12), 349-351. <https://doi.org/10.1002/wea.4489>

Keith Tinkler (2024) John Gadbury's 32 year record of daily London weather (1668-1700), *Weather*, 79 (3), 88-96. <https://doi.org/10.1002/wea.4495>

Ken Kemp (2024) Weather memories – revisited: an eventful posting, *Weather*, 79 (3), 97-101. <https://doi.org/10.1002/wea.4483>

K. P. Shine and F. Morris (2024) The Royal Meteorological Society's Quarterly Journal: celebrating 150 years, *Weather*, 79 (4), 140-141. <https://doi.org/10.1002/wea.4543>

A. J. Kettle and C. Murphy (2024) Deciphering extreme rainfall and historical floods at Easkey on the west coast of Ireland, *Weather*, 79 (9), 300-306. <https://doi.org/10.1002/wea.4452>

Other journals (RMetS and others)

Praveen Teleti, Ed Hawkins and Kevin Wood (2024) Digitizing weather observations from World War II US naval ship logbooks, *Geophys Data Jnl*, 11 (3), 314-329. <https://doi.org/10.1002/gdj3.222>

Richard Cornes et al (2024) The London, Paris and De Bilt sub-daily pressure series, *Geophys Data Jnl*, 11 (3), 330-341. <https://doi.org/10.1002/gdj3.226>

Emily Wallis et al (2024) Exposure biases in early instrumental land surface temperature observations, *Int. Jnl. Climatol.*, 44 (5), 1611-35. <https://doi.org/10.1002/joc.8401>

Richard Cornes and Philip Jones (2024) The seasonal characteristics of English Channel storminess have changed since the early 19th century, *Commun Earth Environ*, 5, 160. <https://www.nature.com/articles/s43247-024-01319-5>

Eva Jobbova et al (2024) The Irish drought impacts database: A 287-year database of drought impacts derived from newspaper archives, *Geophys Data Jnl*, 11 (4), 1007-1023.

<https://doi.org/10.1002/gdj3.272>

Philip Craig and Ed Hawkins (2024) Digitizing observations from the 1861-1875 Met Office Daily Weather Reports using citizen science volunteers, *Geophys Data Jnl*, 11 (4), 608-2.

<https://doi.org/10.1002/gdj3.236>

Patrick McLoughlin et al (2024) The accurate digitization of historical sea level records, *Geophys Data Jnl*, 11 (4), 790-805. <https://doi.org/10.1002/gdj3.256>

JM

***Weather* magazines available - May 1946 to October 1953**

Back in 2008, I bought via eBay, the above unbound run of *Weather* magazines from the grandson of Professor Gordon Dobson, the famous pioneering researcher into atmospheric pollution (1930s) and investigations into the Earth's Ozone layer which continued until his death in 1973. As a member of the Royal Meteorological Society, Professor Dobson would, as today, receive his personal copy of edition of *Weather* each month. He obviously took great care of them because though a little 'tired' at the page edges and slightly rusty spine staples, are nevertheless, in very good condition.

These very earliest editions had a 'tinted' coloured cover photograph (not shown on the thumbnail images displayed in the RMetS archive versions - see below) and are about A5 size. There in each edition were also a scattering of adverts from weather equipment makers etc., interesting in themselves.

It should be remembered that the very earliest editions were published just after the end of World War 2, with its restrictions real-time reports of scientific research during the war years. Consequently, the early editions contain a plethora of 'catch up' papers by leading and 'up and coming' meteorologists of that time. For example, edition 1 contains a review of 'Meteorological Research' by Sir Nelson Johnson, then Director of the UK Meteorological Office, an article about the 'Aurora Borealis' by James Paton, renowned for his work in atmospheric physics, a lighter article about 'Meteorology and Weather Lore' by Professor Brunt and an account of the earliest 'British Radiosonde' by A.J. Lander. Dobson's own 3 Part 'Temperature of the Upper Atmosphere' article appeared in the editions No. 2, 3 and 4. It was also the time of discussions about 'condensation trails' and 'jet-streams'.

It is interesting to note how 'Letters to the Editor' came in very soon after articles appeared showing how efficient the postal service must have been and how quickly the production of the magazine responded, prior to the days of emails and internet publishing! Also, each edition contained a wealth of minor reports and notes about events and personalities which might not otherwise be found via today's online searches.

Copies of all these *Weather* editions and their full articles and sub-articles can, of course, be browsed online via the RMetS online journals archive. However, to me there is still that unique feeling of being able to settle down in a comfortable chair and just browse the original documents with all that serendipity can bring.

I have had the privilege and enjoyment of doing just that for over 15 years but, having reached that time of life when the disposal of one's various collections needs to be considered before the inevitable dotage, I would like to offer this collection of *Weather* to a like-minded, ideally younger, weather enthusiast. There is no actual charge for the magazines but I would welcome repayment of the postage costs (estimated up to about £25 within mainland UK, depending on class of postage preferred) or, should it be convenient, to arrange personal collection from my home in East Wiltshire. Should there be any 'competition' in acquiring these documents, I will probably have to make that difficult choice of recipient. I will leave the date for any applications open until, say, 6 weeks after the date this History Group Newsletter is published.

Alan Heasman
E: alanj_heasman@btinternet.com

Aldbourne, Wiltshire



We welcome membership enquiries from RMetS members (membership is free) and also offers of submissions to this newsletter.

If you are on X / Twitter, please follow us at #RMetS_HistGroup. If not, you can still view tweets at https://twitter.com/RMetS_HistGroup. Contributions can be made via the e-mail address below.

For Facebook members, our Facebook site continues, maintained by Richard Griffith. <https://www.facebook.com/RMetSHistoryGroup/>

All enquiries please to history@rmets.org

