

# ***The International Journal of Meteorology***

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**Volume 37, numbers 372-373**

**Autumn 2012**

**Weather charts for 30 August 55BC when Julius Caesar  
invaded Britain**

**TORRO Tornado division reports June to August 2012**

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**WEATHER IMAGES: Lenticular clouds in West  
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*Front cover image: © MATT CLARK - Lenticular  
cloud, West Yorks, 22nd December 2011*

*Back cover image: © MATT CLARK - Lenticular  
cloud, West Yorks, 22nd December 2011*



# **WEATHER CHARTS FOR 30 AUGUST 55 BC - THE DAY OF THE GALE IN SOUTH-EAST KENT AND THE STRAITS OF DOVER WHEN JULIUS CAESAR INVADED BRITAIN**

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## **ABSTRACT**

Using information from Julius Caesar's *De Bello Gallico* Books 4 and 5, a discussion is held about the weather in and near the Straits of Dover for the three weeks from 25th August to 17th September in the year 55 BC. The analysis made it possible to construct weather charts for the particular date of 30th August 55 BC. This is the earliest date in the world for which weather charts have been devised. On the basis of known winds and tides for the Straits of Dover the passage of a storm system is charted from south of Ireland, along northern France and to the North Sea.

**Keywords:** 55BC, *De Bello Gallico*, Invasion of Britain, Julius Caesar, Straits of Dover

## **INTRODUCTION**

More than two thousand years ago Gaius Julius Caesar was writing his military memoirs on the Gallic War known as *De Bello Gallico*. In the fourth of eight books he recounts the story of his expeditionary force that set sail on 25th August 55 BC from the *Portus Itrius* which was near modern Boulogne-sur-Mer. The ships carrying the cavalry got delayed and set sail four days later. Caesar landed on the coast of Kent on 26 August. As explained here, the cavalry never landed because of a great storm in the Straits of Dover on 30th August 55 BC. This is the earliest precise date in British history to which an account of weather can be given. Nearly 1400 years would pass before anyone else - namely William Merle of Driby (Lincolnshire) and Oxford - would provide dateable records of British weather, viz. 1337 to 1343 (Lawrence 1972, Meaden 1973, Long 1974).

As for details of the invasion of Britain in 55 BC including the tides and courses of the ships, these have been extensively studied by scholars, and well summarised by the historian T. Rice Holmes (1907). Some additional information is provided by Meaden (1976).

## SUMMER WEATHER IN 56 BC

Julius Caesar had been fighting in Gaul since 58 BC. The weather of the summer of 56 BC had been stormy in northern France. Caesar records that Brutus and the fleet had been detained by bad weather in the mouth of the River Loire for the greater part of the summer. Caesar further records that in Normandy at the end of the summer “such storms ensued that the task (of fighting the Morini) was of necessity interrupted and the continual rain, *continuatio imbrum*, made it impossible to maintain the troops in tents.” Caesar ended the fighting for that season and set up his army in winter quarters.

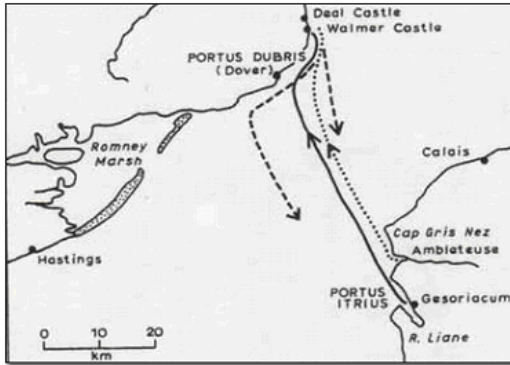
## THE WEATHER FROM 25 TO 29 AUGUST 55 BC

By July in the year 55 BC Caesar began serious preparations for an invasion of south-east Britain by a huge expeditionary force. The fleet was being strengthened by having additional ships built at coastal ports west and east of the chosen embarkation port of Portus Itrius which is near modern Boulogne. Earlier in August Gaius Volusenus, a tribune, spent three days in British waters in a galley reconnoitring the coasts (Book IV, Chapter 21). The weather was presumably fair because no problems of bad weather were mentioned.

By 25 August with preparations completed the weather was said to be fair for sailing: *idoneam tempestatem ad navigandum* (Chapter 23). The winds must have been from south or south-west. Although this suited Caesar, the same winds were contrary to what was needed by an 18 additional transport ships - constructed well to the east in Holland or Belgium - that were trying to reach Caesar's harbour. They had got as far as Ambleteuse which is 10 km north of the Portus Itrius, so Caesar sent his cavalry by road to board these ships. The main fleet would not wait but would set sail with the tide that night from the Portus Itrius (Figure 1). As the fleet passed Ambleteuse Caesar noted that the ships with the cavalry had not weighed anchor - nor did they for another three days.

The remainder of the invasion fleet comprised two legions totalling 10,000 men in about 80 transport sailing craft. Caesar was in one of the fast galleys. They set off with the tide just after midnight. The leading ships reached the British coast on 26th August at about the fourth hour of the day (between 9 and 10 a.m.) and sighted the Britons watching from the white cliffs. The ships waited until the ninth hour for the remaining craft to catch up. A council of war was held in this period. Caesar wrote that the sea was *celerem atque instabilem*, ‘quick and irregular’ meaning slightly choppy. He writes that “catching both a favourable wind and tide” the fleet moved northward by what amounts to 12 km before grounding and anchoring at a place where the shore was “plain and open”. A south to south-west wind of Beaufort Force 3 or 4 is implied. In the face of enemy action disembarkation took place at a point that appears to have been between Walmer and Deal, perhaps near what is now Walmer Castle.

The sun was setting. The galleys were hauled up the beach and the heavy transport ships left at anchor.



- Outward route of Caesar's ships 25th to 26th August  
 ..... Outward route of the ships transporting the cavalry 29th to 30th August  
 - - - - - Approximate routes of the storm-driven transport ships 30th to 31st August.

Figure 1. The map shows the coast of Kent with the Straits of Dover and north-east Gaul as they were in Roman times.

## THE NORTH-EASTERLY GALE OF 30 AUGUST 55 BC, AND THE FATE OF THE SHIPS AT SEA

In the next three days no bad weather or adverse winds were reported. The cavalry ships were increasingly overdue, until, on the morning of 30th August, these last ships were sighted out to sea and nearing the camp (Chapter 28). Caesar writes that they had set sail some 15 to 20 hours previously in a gentle breeze (*leni vento*) that must have been from a favourable southerly quarter.

Unfortunately during the voyage the wind had backed and freshened because as the 18 ships were reaching their destination in view of the camp (*ex castris viderentur*) Caesar records that such a bad storm suddenly arose, *tanta tempestas subito coorta est*, that none of the ships could stay on course. Caesar writes "some were carried back to the port from which they had started, others were swept down, in great peril to themselves, to the lower, that is, the more westerly part of the island. They anchored nonetheless, but when they began to fill with waves they were compelled to stand out to sea with the oncoming night, and proceeded to the continent".

This means that the east coast of Kent was subject to a gale from the north-east or east-north-east. If the winds had instead been from the east, the ships would have been driven ashore and wrecked. On the other hand Caesar's Book V tells us that not a single man or ship was lost (Book V, Chapter 23). Yet if the afternoon gale had been from the north or north-north-east, the cliffs of Dover would have provided shelter for those ships that had run southwards with the wind. Hence, these ships were carried to Folkestone and beyond; but

lacking helpful shelter there and not wanting to become waterlogged at anchor they chose to be blown back to Gaul during the hours of darkness - probably reassured and aided before daybreak by a further backing and weakening of the wind. The remainder of the 18 transport ships - those carried straight back to Ambleteuse - were likely laid to on the port tack with just enough sail to steady them. After passing Cap Gris Nez, they would have found shelter beyond this headland, allowing them to continue safely to the port from which they had started. Figure 1 explains.

#### THE NORTH-EASTERLY GALE OF 30TH AUGUST 55 BC AND THE FATE OF THE SHIPS AT THE BEACH HEAD

On the shore and mainland of Kent the north-easterly gale had disastrous consequences. That same night, the moon was full, *eadem nocte esset luna plena*. High water was an hour before midnight. With off-shore winds and a storm surge, the sea rose to that of a spring tide. Caesar wrote as follows:

“Therefore the tide was found to have filled the warships, in which Caesar had had his army carried across, and which he had drawn up on dry land (but not far enough); and at the same time the storm was battering the transport ships which were fastened to anchors. Nor had our troops any chance of handling them or helping. Several ships went to pieces; and the others, by loss of cables, anchors, and the rest of their tackle, were rendered useless for sailing; this inevitably caused much consternation throughout the army. There were no other ships to carry them back; everything required for the repair of the ships was lacking; and, as it was generally known that the army was to winter in Gallia, no corn had been provided in these parts against the winter”.

#### WEATHER CHARTS FOR 30TH AUGUST 55 BC

Caesar's account, along with what we have deduced and explained here, allows an understanding of the cyclonic situation for the day and night of 30th-31st August to be compiled in the form of simple weather charts (Figure 2). The origin of the gale which lasted 12 hours or more in the Straits of Dover would have been an intense depression that had moved from sea areas Shannon or Sole to north-west France and then across Normandy to north-east France and Belgium. It is probable that the unfortunate cavalry departed with the tide on the night of 29th August with a light southerly wind. The depression was then west or north-west of Biscay, and approaching the coast of north-west France. During the 15 to 20 hours of the ships' voyage, the depression crossed into France towards Normandy, and the winds in the Straits of Dover would have been strengthening and backing to easterly, and then to east-north-east and north-east.

In this sea area and over south-east Kent, the highest winds appear to have been reached during the afternoon and evening of the 30th. Subsequently during the night, with the depression nearing the North Sea, a storm surge

peaked at about the time of high tide. This coincidence is what proved calamitous for the beached galleys and the anchored transports. Clearly, the height of the daytime high tide was not abnormal, despite the rough weather, otherwise the galleys at least would have been hauled farther up the beach before nightfall.

Readers are welcome to search the Weather Logs in Weather or the weather charts of the Meteorological Office to seek comparable conditions for August/September that may have developed in the last century. The date of one winter example is 19th-20th February 1957 when a polar low with central pressure below 1004 mb at 0600 hours reached the southern coast of Ireland, at which time the wind at Dover was south-westerly. By midnight this low had advanced to Brittany in north-west France and the Dover wind had backed to east. Next morning at 0600 hrs the depression was centred over Normandy and its pressure fallen below 1000 mb. The Dover wind had risen strongly and was east to north-east.

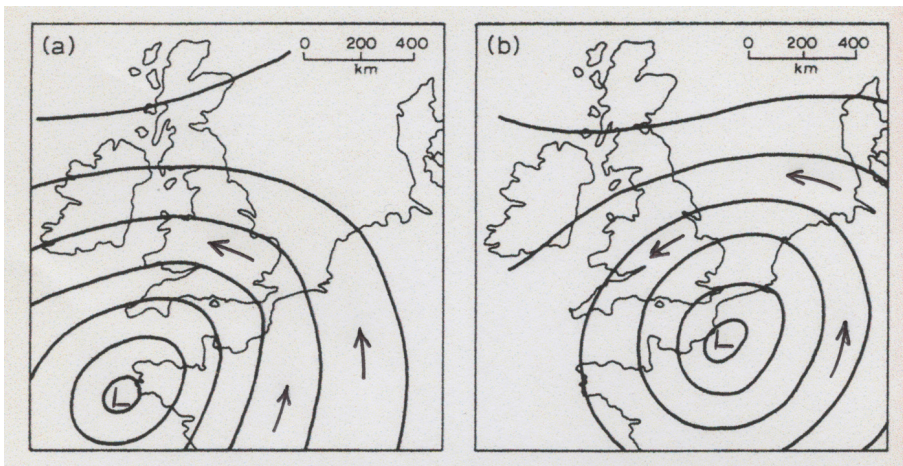


Figure 2. Weather chart proposed for 0600 hours (a) and 1800 hours (b) on the 30th August in the year 55 BC.

The charts relate to winds deducible for the Straits of Dover and south coast of Kent as follows:

- 0000 hrs, south, light to moderate;
- 0600 hrs, approximately south-east, moderate to fresh;
- 1200 hrs, east to north-east, strong to gale;
- 1800 hrs, north-east, gale;
- 2400 hrs, north-east to north, gale.

## SEPTEMBER 55 BC AND THE RETURN OF CAESAR'S ARMY TO GAUL

The storm was a disaster for the expeditionary force. They had no cavalry, corn, ships and the general support equipment needed by the legions. They could only think about leaving Britain as soon as possible. They were obliged to do their best repairing and rebuilding ships using timber and iron salvaged from the 12 most badly damaged ships, and to appropriate the conveniently ripe corn from surrounding fields.

Towards the 9th or 10th September while the Seventh Legion was out gathering corn, the camp guards reported a greater than usual rising of dust from that direction (Chapter 32). This suggests conditions had been dry for several days. The clouds of dust were caused by a British attack, and for days afterwards similar skirmishes followed. Caesar next writes *secutae sunt continuos complures dies tempestates* - for several days continuously storms occurred. The Romans stayed in camp, and the Britons postponed hostilities. Finally, this quiet interval ended with the Britons overreaching themselves by making an ill-planned attack and losing the battle that day.

The date (explained below) was 16th to 17th September: “. . . the equinox was near and with a damaged fleet he [Caesar] did not think it right to subject his sailing to the risk of winter storms”. That night, the weather turning fine - *idoneam tempestatem* - and aided by a favourable breeze (probably a cool north-westerly following the last cold front), the fleet sailed a little after midnight, paulo post mediam noctem. Presumably this was close to high tide. Using tide tables it seems this would have been about 17 days after the high tide of 2300 hours 30th August, which makes the departure date 16th or 17th September. The ships arrived at the Portus Itrius safely next day.

## CONCLUSIONS

Because of the weather the Romans spent only three weeks in Britain - between the 26th August and the 16th or 17th September. Caesar gave enough detail about the storm of 30th to 31st August 55 BC that weather maps could be produced showing the passage of a depression across northern coastal France on the 30th.

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# TORRO TORNADO DIVISION REPORT: June 2012

BY PAUL R. BROWN AND G. TERENCE MEADEN

With the exception of just one or two days the weather of June 2012 was dominated by low pressure from beginning to end, resulting in a cool and exceptionally wet month except in the far northwest. There were three tornadoes, one waterspout, and 18 reports of funnel clouds in the United Kingdom. There were also (provisionally) two tornadoes and four funnel clouds in the Irish Republic.

LD2012Jun04 *Lechlade on Thames, Gloucestershire (51° 41' N 1° 42' W, SU 2199)*

Ms Laura Sanders contacted us about a 'tornado' (i.e. a land devil) that she experienced at about 1545 GMT. It lifted water a few feet out of the river then carried picnic items up to above tree-top height. At 1200 GMT a weak ridge of high pressure covered most of Britain from a high, 1029 mb, over Greenland. There were scattered showers in the east and north but elsewhere the day was dry though rather cloudy (and very cool for June).

FC/TN2012Jun06/I *Wishaw, Lanarkshire (c 55° 45' N 3° 56' W, NS 7953)*

The *Wishaw Press* of the 13th June published a photograph taken by Mr Joe Yuill at Gowkthrapple showing a long funnel cloud descending behind distant trees in the direction of Waterloo (to east) at 1445 GMT.

At 1200 GMT a low, 996 mb, was centred over northeast England and a shower trough was crossing England and Wales. Eastern Scotland had spells of rain; elsewhere there were scattered showers, which turned heavy and thundery over central England in the afternoon.

fc2012Jun06/II *NE of Empingham, Lincolnshire (c 52° 40' N 0° 36' W, SK 9508)*

The *Stamford Mercury* (11th June) published a letter from Mr Matt Knighton asking if any readers had seen what his parents thought was a funnel cloud to the northeast of Empingham at about 1640 GMT.

FC2012Jun10/I *SE of Stafford, Staffordshire (c 52° 46' N 1° 57' W, SK 0418)*

Mr Lee Pettman submitted a report of a funnel cloud three-quarters of the way to the ground seen from between junctions 12 and 14 of the M6 motorway, i.e. south of Stafford, from which point it was 5-10 miles to the east. Time was 2030-2045 GMT.

At 1200 GMT a complex area of low pressure covered the British Isles; there were centres of 1002-1004 over south Norway, the English Channel, and

west of Ireland, and 1007 mb over Ireland. There was rain or showers in various areas during the day (especially the north and south).

FC2012Jun10/II *Milton Keynes, Buckinghamshire (52° 01' N 0° 46' W, SP 8537)*

A photograph was received from Ms Shelley Renzow showing a small funnel cloud (time not known).

FC/TN2012Jun11/I *Dungiven, County Derry (c 54° 55' N 6° 56' W, C 6809)*

Mr Kingsley Dysart photographed a fairly long funnel cloud from outside Dungiven about 1800 GMT. It was four or five miles away and he thought it could have briefly touched down. There was hail and thunder in the area.

At 1200 GMT a low, 999 mb, was slow-moving over southeast England and a northeasterly airflow covered most of Britain. There were outbreaks of rain in the south and scattered showers (locally thundery) elsewhere, especially over Ireland.

FC2012Jun11/II *Gunwalloe, near Helston, Cornwall (50° 03' N 5° 17' W, SW 6522)*

A photograph of a long, nearly horizontal, funnel cloud was shown on UKWeatherworld (date originally given as 12th). Time was 1052 GMT.

FC2012Jun11/III *Rhose Airport, Glamorgan (51° 24' N 3° 21' W, ST 0667)*

A recent funnel cloud was reported in the 1120 GMT METAR from Rhose. And a photograph taken by Mr Matt Ellis from Barry was published in *Barry and District News* (14th June), which shows it reaching a good halfway to the ground.

FC2012Jun12/I *Sawel Mountain, County Derry (c 54° 50' N 6° 57' W, H 6898)*

Mr Kieran Donnelly sent us a photograph of a thin vertical funnel cloud seen from Claudy at 1130 GMT and apparently over the eastern slopes of Sawel Mountain to the southeast.

At 1200 GMT a very weak northerly airstream covered the British Isles between complex lows of 1000-1002 mb over Europe and a ridge of high pressure in mid-Atlantic. Showers were widespread over Ireland (where a few turned thundery) and also over Scotland, but much fewer over England and Wales.

FC2012Jun12/II *Bossiney, Cornwall (50° 40' N 4° 45' W, SX 0689)*

The *Cornish Guardian* (15th June) published a photograph of a vertical funnel cloud taken by Mr Avian Sandercock over Bossiney Bay at 1830 GMT; it lasted about 10 minutes.

FC2012Jun13 *Loughermore, County Derry (54° 58' N 7° 07' W, C 5714)*

A photograph received from Mr Owen Anderson showed a distant funnel cloud seen at Loughermore at 0930 GMT (date given erroneously as 15th); it lasted three minutes.

At 1200 GMT a shallow low of 1015 mb was centred over Ireland. Showers (locally thundery) again developed in many western and northern parts of the British Isles, but were more isolated in central and eastern areas.

WS2012Jun13 *Pwllheli, Caernarvonshire (c 52° 53' N 4° 25' W, SH 3834)*

The *Daily Post* (North Wales edition) of the 14th June published a photograph taken by Mr Martin Williams showing a well-developed waterspout off Pwllheli Harbour (time not stated).

fc2012Jun17/I *Polzeath, Cornwall (50° 34' N 4° 55' W, SW 9379)*

John Pask of TORRO saw a probable funnel cloud a short distance offshore from Polzeath Beach at about 1340 GMT.

At 1200 GMT a weakening westerly airflow covered the British Isles between a low, 1005 mb, in the Norwegian Sea and a high, 1024 mb, over Germany. Scattered showers (and isolated thunderstorms) developed, mainly in central, western, and northern areas.

fc2012Jun17/II *Rugby, Warwickshire (52° 22' N 1° 17' W, SP 4974)*

Mr Matt Barrow contacted us about a 'huge funnel cloud' which looked as though it might have reached the ground. It was northwest of his viewpoint in Ferndown Road and the time was about 2025 GMT.

FC2012Jun17/III *Hempnall, Norfolk (52° 30' N 1° 18' E, TM 2494)*

An anonymous photograph showed a short funnel cloud (time not stated, probably evening). Information from Chris Warner of TORRO.

FC2012Jun18/I *Haddenham, Buckinghamshire (51° 46' N 0° 56' W, SP 7408)*

The *Bucks Herald* of the 18th June published a photograph taken by Mr Arjan van Gelderen at 1000 GMT showing a well-formed funnel reaching at least halfway to the ground. Reports were also received from Mr Vince Coombes and Mr Matthew Knighton, who saw it from or near Aylesbury.

At 1200 GMT a weak ridge of high pressure was moving east across England between shallow lows to the east and west of the British Isles. There were widespread showers over Ireland (some thundery) and also in northeast Scotland, but only isolated light ones elsewhere.

FC2012Jun18/II *Immingham area, Lincolnshire (c 53° 37' N 0° 15' W, TA 1615)*

Mr Des Harris photographed a short funnel cloud seen at a distance from near Humberside Airport, apparently in the region of Immingham or

Killingholme. Time 1039-1041 GMT, duration 3-4 minutes.

fc/t?2012Jun19 *Cloghcor, near Strabane, County Tyrone (c 54° 52' N 7° 25' W, C 3703)*

Mr Tyler Collins submitted a report of a distant funnel cloud seen in the direction of Porthall, Donegal, between 1615 and 1700 GMT. He stated that it extended down to the ground, but the picture is inconclusive and we have doubts about the event.

At 1200 GMT a slack pressure gradient covered the British Isles between a low, 1005 mb, west of Ireland and a high, 1022 mb, over the Baltic; there was a small low of 1014 mb over north Scotland. There were scattered showers over Ireland, Wales, and Scotland (where some turned thundery), but much of England (except the far north) had a dry day.

FC2012Jun19 *Warkworth, Northumberland (55° 21' N 1° 37' W, NU 2406)*

Mr Tony Sales (UKWeatherworld forum) photographed a slanting funnel cloud one-third of the way to the ground (it was much longer just before), time not stated but in the morning.

fc?2012Jun19 *Brede, East Sussex (50° 56' N 0° 35' E, TQ 8218)*

Mr Matt Carey reported a 'wall cloud and funnel forming' northeast of his position at 1147 GMT (too doubtful to count).

TN2012Jun21 *Long Sutton, Lincolnshire (52° 47' N 0° 07' E to 52° 47' N 0° 08' E, c TF 434223 to TF 440235)*

The *Spalding Guardian* of the 21st June reported that a tornado had occurred in the village of Long Sutton at about 1330 GMT that afternoon; a published photograph by Ms Emma Watson showed the funnel cloud reaching most of the way to the ground. Reports spoke of greenhouses, fences, and sheds being damaged, and a chimney stack dislodged, in Seagate Road (TF 434223) and Woad Lane (TF 439231). An eyewitness report was received via Mr Chris Sargent (SkyWarn) which described it thus: "All of a sudden the wind was extreme and very ferocious. The large oak tree ... was moving in a way never seen before ... it only lasted what seemed like a minute or so ... in the blink of an eye our fencing had gone ... the 4" posts just snapped at the base like twigs. Watched the tornado/whirlwind funnel tracking ... across the wheat field at the rear of the property towards the Butterfly Park ... The path of the tornado can be seen by the flattened wheat. The sound was similar to that of a high-speed train ...". At the Butterfly and Wildlife Park (TF 440235) the security guard was injured when the caravan he was in was rolled over and wrecked by the tornado. Track probably about 1.5 km from southsouthwest. Force T1-2.

At 1200 GMT a low, 1002 mb, was drifting north over Ireland and its occluded front was moving north over central England and Ireland; a small but

rather intense low, 1000 mb, was moving east through the English Channel. Most areas had rain or showers at some time during the day (thunderstorms broke out near The Wash about the time of the tornado).

fc2012Jun28/I *Antrim, County Antrim (54° 43' N 6° 14' W, J 1487)*

Mr David Michael observed a funnel cloud between 1900 and 2000 GMT during a thunderstorm with hail and gusty winds.

At 1200 GMT a low, 993 mb, off southwest Ireland was drifting northeast and becoming complex; its cold front was crossing western Britain preceded by a very warm southerly airflow. Thunderstorms broke out over South Wales early in the day and became severe as they spread northeast across central and northern England later; separate storms affected Ireland and Scotland.

TN2012Jun28/I *Newbold Verdon to Cropston Reservoir, Leicestershire (52° 37' N 1° 21' W to 52° 42' N 1° 12' W, SK 4403 to SK 547123)*

The most significant weather of this day was the fall of very large hailstones up to 8 cm across in the east Midlands and eastern England, but there were also two well-documented tornadoes in the same area. It is worth noting that both the large hail and the tornadoes were accurately forecast by TORRO.

The *Leicester Mercury* of the 28th June mentioned that there had been reports of tornado damage to homes in Newtown Linford that day. Stuart Robinson of TORRO visited the area the following day and confirmed a tornado track from west of Merry Lees Industrial Estate (SK 463057), through Newtown Linford, to north of Cropston Reservoir. The main effect was broken trees, snapped off rather than uprooted; there was also damage to the roof of a building at Thornton. Sam Jowett of TORRO confirmed these findings and estimated the force at T2; but the tornado seemed to be up to half a mile (0.8 km) wide near Thornton Reservoir, based on damaged trees.

Ms Julie Sargent sent us a graphic account of the effects at Bradgate Hill, Groby (SK 505091). At about 1025 GMT the atmosphere became very dark and she heard what she thought was thunder but which turned out to be the tornado - and within seconds the damage was done: tiles were removed from the roof, a greenhouse and wooden barn destroyed, and more than 30 trees, some large, uprooted. Following this report Tim Prosser made a detailed study of this part of the track and confirmed that the tornado reached its greatest strength over the high ground in this area, where it was up to T4, based on extensive severe damage to trees.

Ms Caroline Tilley from Newbold Verdon reported local damage to roof tiles and garden fences and trees uprooted during a thunderstorm between 0945 and 1015 GMT. This is 2-3 km before the first position identified in the site investigations and makes a total track length of 13 km from west-south-west.

Reports of severe weather were also received from places along a line

some 6 km south of the above track: from west Coventry (SP 2878) through Bedworth (SP 3586), Hinckley SP 4294), Earl Shilton (SP 4697), Thurlaston (SP 5099), north Leicester (SK 5806) to Asfordby (SK 7019), between 1140 and 1300 GMT. Most of these reports concentrated on the hail but included some accounts of severe winds, especially at Earl Shilton and Thurlaston, and rather vague reports of funnel clouds at Bedworth (1200 GMT) and west of Leicester (untimed); there was, however, no positive evidence of rotation at ground level (the storm at Leicester was described as a 'tornado' but without any evidence).

Further information about the storms of this day was received from correspondents listed in Acknowledgements.

TN2012Jun28/II *Swarby to Ewerby, Lincolnshire (52° 56' N 0° 28' W to 53° 01' N 0° 20' W, TF 034392 to TF 1247)*

Several fine photographs or clips of film of this tornado were taken, showing a large wedge-shaped funnel tapering down to the ground. The primary press source was the *Sleaford Standard* (28th June and later), which reported blocked roads and damage to homes associated with thunderstorms that crossed the area between 1330 and 1400 GMT. At Swarby (TF 0440) Ms Linda Whitney reported roof tiles removed, a garage roof collapsed, and trees uprooted, while at Ewerby Ms Sarah Whitelaw watched the tornado sucking up debris for about five minutes before it lifted off the ground after leaving the village.

Ms Linda Walmesly sent us an account of her experience at Aisby. At about 1330 GMT the atmosphere became very dark and thunder was heard continuously in the distance; there was then a large rotating circle of cloud directly overhead, and out to the west faster-moving, wispy clouds low to the ground (the funnel descending); as it passed away towards Swarby it reached the ground briefly in a field where it flattened wheat and felled a tree. Tim Prosser of TORRO, who made the site investigation (30th June), confirmed this as the start of the track. He was able to confirm a tornado at Swarby and Ewerby, where there was damage to roofs and trees, but there was little evidence in between, either because the tornado lifted from the ground or because of the featurelessness of the area. The total track length was 12 km from southwest. Force T2 (possibly T3).

fc2012Jun28/II *Old Leake, Lincolnshire (53° 02' N 0° 05' E, TF 4050)*

Ms Sharon McGovern reported thunder with rotating clouds that at one point developed into a probable funnel cloud. Time was 1505 GMT.

### Whirlwinds in the Irish Republic

LD2012Jun10 *Lanesborough, County Longford (c 53° 40' N 8° 01' W, M 9969)*

The *Longford Leader* of the 13th June had an account of a 'mini-tornado' that lifted a trampoline (presumably out of doors) about two miles outside Lanesborough shortly after midday. See the Stafford entry above for the synoptic situation (the weather was fair over most of Ireland at this time).

tn2012Jun11 *Slieve Snaght, County Donegal (c 55° 12' N 7° 20' W, C 4339)*

Reports on *RTE News* and elsewhere showed pictures (e.g. by Niamh O'Raw and Paula Doherty) of a very long thin sinuous funnel cloud seen from Buncrana in the vicinity of Slieve Snaght mountain (Sliabh Sneacht), where it probably reached the ground. The time was 1030 GMT. See the Dungiven entry above for the synoptic situation.

FC2012Jun12 *Comeragh Mountains, County Waterford (c 52° 18' N 7° 34' W, S 3016)*

Mr Mike Flynn photographed a well-formed funnel cloud reaching nearly down to the top of the Comeragh Mountains at 1432 GMT. See the Sawel Mountain entry above for the synoptic situation.

tn2012Jun12 *NW of Newtown, County Kildare (c 53° 24' N 6° 48' W, N 8040)*

Mr Graham Geraghty (Irish Weather Network) recorded a funnel cloud that appeared briefly to extend down to the ground in a ragged form at about 1900 GMT. His viewpoint was just north of Newtown, County Kildare, from where it appeared to be 1-1.5 km to the west.

FC2012Jun13? *County Clare*

A picture was received of a well-developed funnel cloud reaching at least halfway to the ground seen at about 1840 GMT. The location was only given as 'County Clare', and it is uncertain whether the date should be the 13th or 15th.

FC2012Jun17 *Drinagh, County Wexford (52° 18' N 6° 28' W, T 0518)*

A photograph of this funnel cloud appeared in the *Wexford People* (20th June). It was taken by Mr Fintan Moran at about 1045 GMT and shows a long slanting funnel reaching halfway to the ground. See the Polzeath entry above for the synoptic situation.

FC2012Jun21 *Newbridge, County Kildare (53° 11' N 6° 47' W, N 8116)*

The *Leinster Leader* (26th June) published a photograph taken by Mr Des Curran showing a well-developed funnel reaching more than halfway to the ground near Old Connell, Newbridge (time not stated but in the afternoon). See the Long Sutton entry above for the synoptic situation.

## ACKNOWLEDGEMENTS

We are grateful to the following additional correspondents for their information about the storms of 28th June: Ms Annabel Cowley (FC west of Leicester); Ms Jackie Dagnan (TS, HS Nuneaton/Bedworth); Ms Jo Duffield (TS, HS, wind Sleaford); Ms Danielle Greasley (TS, HS Earl Shilton); Mr Paul Heath (HS Asfordby); Ms Sara Hills (TS, HS Coventry); Ms Martyne Hook (TS, HS Hinkley); Ms Alison Kennedy (TN Swarby); Ms Louise Loates (TS, HS Nuneaton/Hinkley); Ms Maria Mann-Taylor (TS, HS Burbage); Ms Jessica Marshall (TS, HS Coventry); Mr Richard Parsons (TS, HS Bedworth); Ms Victoria Royce Williams (TS Bridgnorth); Mr Neil Shorrocks (TN, HS Leicester).

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## **BOOK REVIEW: HISTORY OF THE METEOROLOGICAL OFFICE BY MALCOLM WALKER**

Cambridge University Press 2012. £70. 468pp. ISBN: 978-0521-85985-1

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This major work by an author who will be familiar to readers with an interest in meteorological history tells the story of the Meteorological Office from its beginnings in 1854 up to 2010. It contains 13 chapters and a detailed index, together with a number of black and white photographs (including one of each director).

From an initial staff of just four, the Meteorological Office grew to employ nearly 4000 in its heyday before declining to about half that number today. Much of the history revolves round its successive directors. The first, Admiral Fitzroy, was a visionary with great ideas about the development of weather forecasting, but was not always very practical in his methods. His independent approach attracted criticism which, as a man of sensitive character, eventually got him down to the point where he got out of bed one morning and cut his throat. His successor, Robert Scott, was the opposite: a fine administrator but with few scientific aspirations, under whom the Office stagnated. The third director, Sir Napier Shaw, combined the best qualities of his two predecessors - he was both a keen scientist and an effective organiser. During his time (1900-20) the Meteorological Office came into its own as a scientific institution. He had an enormous capacity for work, but was notoriously discursive in his writings (not a man to use one word where ten would do).

After the energetic and ebullient Shaw, his successor, Sir George Simpson, appears as a rather colourless character, who nevertheless presided over the Office efficiently during the inter-war years. Sir Nelson Johnson had the demanding task of taking the Office through the Second World War, which he achieved through many long hours of hard work. But unlike Shaw, who lived on to a great age, Johnson worked and worried himself into an early grave, and died from an overdose of aspirin not long after retiring in 1953. Sir Graham

Sutton was a quiet professorial type who saw the Office through to the mid-sixties. Then came Sir John Mason.

Mason was a brilliant cloud physicist and believed strongly in the modernisation of the Meteorological Office (which he felt had dragged its feet since the War); but he lacked two qualities possessed by most of his predecessors: a courteous manner and a sense of history and tradition. He it was who presided over the closure of Kew Observatory and the cessation of the Daily Weather Report; and while he laid the blame firmly on government cuts, one is left with the suspicion that he was not sorry to be given an excuse to bring those historic institutions to an end. Worse was to come, however, under his successors of the 1990s and 2000s. The old rigorous standards of synoptic and climatological record-keeping were largely abandoned, many outstations were closed, and publication of all books and periodicals by the Meteorological Office virtually ceased. The era of long-serving memorable directors was now coming to an end, and after Mason's retirement in 1983 later incumbents came and went with increasing frequency, some of them acting more as though they were running a commercial firm than a public service.

Although the tone of this review may sound excessively negative about the modern Meteorological Office, the book itself is, on the whole, balanced and impartial; which is not to say the author shies away from recounting some of the mistakes of recent years. The book has been a long time in the making and contains a wealth of information, some of the footnotes being meticulous almost to a fault. There is, however, a change in the character of the narrative after the mid-twentieth century. Up to that time it is full of references to minutes of meetings and inter-departmental letters and memos concerning the Meteorological Office. From the 1950s these all but cease and we get just a straightforward description of the Office and its work (no more accounts of behind-the-scenes arguments over policy and practice); whether this is because such records are no longer archived as they used to be, or whether it is to avoid embarrassment to people who might still be alive, is not clear.

This institutional biography, like many personal biographies, concentrates more on the early and middle years of its subject's life than on the later years. Thus the first 400 pages take us to the 1970s, the remaining decades being dealt with in just 50 pages. Perhaps this is just as well. For those who knew the Office in its glory years the last few chapters will make depressing reading, for the reasons mentioned above. The book formally ends in 2010, but the author felt bound to mention as a postscript an almost unbelievable change that came about in the following year, when the Meteorological Office was separated from the Ministry of Defence (after nearly a hundred years) and placed under the Department for Business (where, in fact, it began in 1854).

The book is both well-written and well-produced and, apart from a bit of a howler on page xxi, where the plural of director-general is given as director-generals (instead of directors-general), it appears to have been thoroughly proof-read. Its greatest appeal will be to former employees of the Meteorological Office, but anyone with an interest in meteorological history will find it well worth the £70 in hardback (a book of this standard is unlikely to appear in paperback). **PRB**



## TORRO TORNADO DIVISION REPORT: July 2012

BY PAUL R. BROWN AND G.TERENCE MEADEN

The very cyclonic pattern of June 2012 continued for much of July but high pressure developed for a while in the last week of the month. Funnel clouds were reported almost daily in the first three weeks of July and there were further reports at the end of the month, making a grand total of 47, the highest monthly total on record (we have excluded duplicate reports of the same funnel as far as possible, but a few may remain). A number of funnel clouds, photographed from a distance, looked as though they might have reached the ground to produce tornadoes but only one is definitely known to have done so, while two others reached the sea to form waterspouts.

FCs2012Jul04 *Glasgow (Abbotsinch) Airport, Renfrewshire (55° 52' N 4° 27' N, NS 4766)*

A recent funnel cloud was reported in the 1750 GMT METAR from Glasgow Airport (Abbotsinch) and another in the vicinity at 1820 GMT. TORRO member Jeff Blackshaw photographed the first one at 1740 GMT, as did Mr Chris Jephcotts and Mr David Alvarado; all show a thin, nearly horizontal, funnel.

At 1800 GMT a low, 1003 mb, was slow-moving near southwest Ireland and its cold front was moving slowly northeast across England preceded by a shower trough. There were showers and thunderstorms near both these features (including the Glasgow area).

tn2012Jul04 *Earlston, Berwickshire (55° 38' N 2° 41' W, NT 5738)*

A photograph taken by Ms Norma Charters at Whitefield Farm, Earlston, at 1730 GMT was published in the *Border Telegraph* (6th July); it showed a well-developed funnel cloud descending below nearby trees, possibly to ground level. The newspaper also quoted another witness, Ms Barbara Elliot, who said "the bushes on the roadside [Earlston to Gordon] were almost flattened but it lasted only very briefly". Force T0.

FC2012Jul05/I *Hakin, Milford Haven, Pembrokeshire (51° 42' N 5° 03' W, SM 8905)*

The *Western Telegraph* (6th July) published a picture of a funnel cloud taken by Mr Michael Harris at 1730 GMT over Hakin. It was also seen by Ms Tasha Rees, who described it as 'almost touching the ground', though in the photograph it does not appear particularly long.

At 1200 GMT the previous day's low, now 1007 mb, was centred off northwest France and its cold front lay from southwest Scotland to southeast

England. Showers and thunderstorms developed over Scotland and northern and eastern England but many other areas were dry with broken cloud (in fact, most of the funnel clouds this day seemed not to be associated with showers).

FC2012Jul05/II *between Taunton and Bridgwater, Somerset (c 51° 04' N 3° 03' W, ST 2630)*

This funnel cloud was quite widely reported by observers from Taunton and Bridgwater: Mr Steve Wills and Mr Wesley Wilson (separately) contacted us directly, and other accounts and photographs appeared in the *Somerset County Gazette* (6th July) and elsewhere. The time appears to have been about 1345 GMT, and pictures (all taken from a distance) show it between a third and a half of the way to the ground.

FC2012Jul05/III *Jersey Airport, Channel Islands (49° 13' N 2° 12' W)*

A recent funnel cloud was reported in the 1420 GMT METAR from Jersey Airport.

FC2012Jul05/IV *Todmorden, West Yorkshire (53° 43' N 2° 06' W, SD 9324)*

The *Halifax Courier* of the 6th July published a photograph by Mr Billy Fletcher showing a funnel cloud a third of the way to the ground, apparently in the evening.

FC2012Jul05/V *Axford, Wiltshire (51° 29' N 1° 40' W, SU 2370)*

Ms Maria Halstead submitted a report of a funnel cloud seen from Axford at 1645 GMT; her photograph showed a long funnel nearly overhead. Other more distant views from Marlborough and elsewhere were published in the *Wiltshire Gazette and Herald* (6th July) and other sources; while Mr Humphrey Lean and Ms Ria Murphy contacted us to say they had seen it from Bedwyn Railway Station and Chiseldon respectively.

Another correspondent, Ms Rachel Perryman, wrote that she saw a 'tornado' on the horizon while travelling into Bath from the south at 1627 GMT onwards, from where it appeared to be on the ground. Her viewpoint was a long way from Marlborough so perhaps this was a separate funnel.

FC2012Jul05/VI *Coventry (Baginton) Airport, Warwickshire (c 52° 22' N 1° 29' W, SP 3574)*

A funnel cloud was reported in the vicinity from Coventry Airport at 1920 GMT. Mr Ashley Chrimes contacted us to report a possible funnel cloud at Kenilworth (SP 2972) at 2100 GMT. In spite of the discrepancy in times we are inclined to treat this as the same event.

FC2012Jul06 *Market Lavington, Wiltshire (51° 17' N 1° 59' W, SU 0154)*

Mr Will Cooper sent us a photograph of a short-lived funnel cloud

reaching about halfway to the ground seen to the northwest of Market Lavington during a thunderstorm at 1258 GMT. At 1200 GMT a low, 1004 mb, was moving west across the Midlands. England and Wales had outbreaks of rain, heavy at times, and local thunderstorms.

fc2012Jul07/I *Knaresborough, North Yorkshire (54° 00' N 1° 28' W, SE 3557)*

A report was received that a picture of a funnel cloud had been shown on the *BBC Look North* television programme (time not stated).

At 1200 GMT the previous day's low, now 997 mb, was centred over Cornwall and drifting very slowly east. There was rain over central Scotland and scattered showers and thunderstorms over England and Wales.

FC/TN?2012Jul07 *near Bolsover, Derbyshire (53° 15' N 1° 17' W, SK 4872)*

Mr Steven Turner observed slow rotation in a bank of cloud moving towards Cresswell from Bolsover at 1515 GMT, which intensified and lowered into what he described as a 'tornado' down to the ground at the stated coordinates (which are in open ground). His film showed a swirling lowering of the cloudbase towards the ground but no obvious funnel.

FC2012Jul07/II *Raunds, Northamptonshire (52° 20' N 0° 33' W, SP 9972)*

Mr Mark Avery saw what he described as a 'tornado' coming out of a cloud to the east of Raunds at about 1600 GMT.

FC/TN2012Jul09/I *near Taunton, Somerset (51° 02' N 3° 04' W, c ST 2524)*

A report was received from Mr Aaron Clark, who saw 'lots of funnel clouds' under the base of a thundercloud at about 1430 GMT; then as he was leaving Taunton for Yeovil he saw a long thin funnel that appeared to extend down to the ground. An anonymous undated photograph showed quite a long funnel cloud over Taunton - probably this one.

At 1200 GMT a weak northwesterly airstream covered England and Wales associated with a low, 999 mb, over Denmark. Bands of heavy showers developed over northern England and central Ireland, while Wales and the rest of England had lighter more scattered showers.

2FC2012Jul09/II *Shrewsbury, Shropshire (52° 42' N 2° 45' W, SJ 4912)*

Ms Kate O'Connor submitted a report of two funnel clouds seen at 1925 GMT during a hail shower. Her account was also published in the *Shropshire Star* of the 12th July, which included a film clip of a funnel cloud reaching a long way to the ground.

FC/TN2012Jul09/III *Waddington Airfield, Lincolnshire (53° 10' N 0° 32' W, SK 9864)*

A funnel cloud was reported in the 1450 GMT METAR from

RAF Waddington. Reports of the same event were received from Ms Lisa Crowe at Waddington and Mr Keith Coldron at Bracebridge Heath (SK 9867); the latter informant saw debris from trees that were bent over by the wind, and his picture showed a long funnel more than halfway to the ground.

FC2010Jul10/I *Scampton, Lincolnshire (53° 18' N 0° 35' W, SK 9479)*

A photograph was received from Mr Scott Sawyer showing a funnel cloud nearly halfway to the ground at 1515 GMT.

At 1200 GMT the synoptic pattern was similar to that of the previous day, with a weak northwesterly airstream and several minor fronts or troughs. Showers (some thundery) developed in many central and eastern areas of both England and Ireland, while Scotland had more persistent rain.

FC2012Jul10/II *Waddington Airfield, Lincolnshire (53° 10' N 0° 32' W, SK 9864)*

A funnel cloud was reported in the 1017 GMT SPECI from RAF Waddington.

FC2012Jul10/III *Louth, Lincolnshire (53° 22' N 0° 01' E, TF 3487)*

A photograph in the *Louth Leader* of the 12th July, taken by Mr Lee Freeman from the Football Ground in the evening, showed a distant funnel cloud at least halfway to the ground.

FC2012Jul10/IV *Sutton St James, Lincolnshire (52° 45' N 0° 03' E, TF 3918)*

The *Spalding Guardian* (10th July) published a photograph of a funnel cloud taken by Mr Keith Cooper just after 1500 GMT; it was in view for 20 minutes and appears quite long in the picture.

FC2012Jul10/V *Langham Airfield area, Norfolk (c 52° 56' N 0° 58' E, TF 9942)*

The *Eastern Daily Press* (11th July) published a photograph taken by Mr Peter Harris from Hindringham showing a funnel cloud in the direction of Langham Airfield at about 1700 GMT. Another picture was taken by Mr Richard Challenor; both show it reaching more than halfway to the ground (Mr Harris said it was 'almost touching the ground' when first seen).

FC2012Jul11/I *Campsie Fells, Stirlingshire (c 56° 00' N 4° 13' W, NS 6281)*

The *Kirkintilloch Herald* of the 20th July published a photograph of a funnel cloud descending below the near side of the Campsie Fells, seen from Kirkintilloch by Ms Pamela Marshall for about 10 minutes at 1110 GMT.

At 1200 GMT the British Isles remained under the influence of a cyclonic northwesterly airstream with shower troughs. Scattered heavy showers and thunderstorms again affected England, Wales, and Ireland, while there were longer spells of rain in parts of Scotland.

FC2012Jul11/II *south of Falkirk, Stirlingshire (55° 57' N 3° 47' W, NS 8975)*

A report was received from Ms Helen Anderson of a 'tornado' (probably a funnel cloud) at 1705 GMT over the hills south of Falkirk, seen from Cumbernauld. It was visible for 30 seconds. (Perhaps the same as the preceding entry if one of the reported times is wrong.)

FC/TN2012Jul11/III *Millom, Cumbria (54° 13' N 3° 16' W, c SD 1880)*

The *North-west Evening Mail* (12th July) reported this under the headline 'Tornado hits Millom', but while the published photograph, from Ms Jenny Brumby, showed a well-developed funnel cloud over the Duddon Estuary, it does not appear to reach the surface; she did, however, add that sand was raised from the estuary. The time was about 1900 GMT and there was a hail shower.

FC2012Jul11/IV *near Aspley Guise, Bedfordshire (c 52° 01' N 0° 37' W, SP 9537)*

Mr Richard Buckles photographed a short-lived funnel cloud about one third of the way to the ground in the region of Junction 13 of the M1 motorway, i.e. near Aspley Guise. The time was about 1800 GMT.

FC2012Jul13?/I *Redditch, Worcestershire (52° 16' N 1° 56' W, SP 0564)*

Mr Anthony Burley reported a small funnel cloud from a cumulus to the northeast of Atworth Close at 1921 GMT. He gave the date as the 12th but the 13th seems much more likely from his description of the weather.

At 1200 GMT a complex area of low pressure covered the British Isles, with the main centre of 1000 mb over Wales; an occlusion lay from southern Ireland to East Anglia. There were showers in Wales and central and southern England and more persistent rain across parts of northern England.

FC2012Jul13/II *Royal Leamington Spa, Warwickshire (52° 17' N 1° 33' W, SP 3165)*

Mr Adam Parker sent in a photograph of a small funnel cloud seen for 5-10 minutes at 1650 GMT. The *Leamington Courier* (16th July) published a photograph of what was probably the same funnel, reaching one third of the way to the ground, seen by Mr Dan Weston from near Gaydon at about 1700 GMT.

FC2012Jul13/III *Northampton, Northamptonshire (52° 15' N 0° 54' W, SP 7561)*

The *Northampton Chronicle* (14th July) published anonymous photographs of a funnel cloud seen in the evening. Most show a rather short funnel but one picture (if of the same cloud) showed it much longer. In a separate report Ms Linda Hill gave the time as about 1800 GMT.

FC2012Jul13?/IV *Rockingham, Northamptonshire (c 52° 31' N 0° 44' W, SP 8691)*

The *Northamptonshire Telegraph* of the 17th July published a photograph taken from Corby by Mr David Eaton showing a short funnel cloud (possibly two) at 1800 GMT, apparently over Rockingham. It was travelling from south to north. No date was given but the 13th seems likely.

fc?2012Jul13 *near Slough, Buckinghamshire (51° 30' N 0° 35' W, SU 9978)*

Mr Chris Hugman submitted a photograph taken from three miles west of the junction of the M25 and M4 motorways at about 1845 GMT. The picture is unclear: perhaps a broad funnel cloud the base of which is hidden behind trees, but too uncertain to count.

FC2012Jul14 *Peldon, Essex (51° 48' N 0° 52' E, TL 9816)*

The *Chelmsford Weekly News* of the 17th July published a photograph taken by Mr Tom Harris at Abberton Reservoir Nature Reserve showing a long funnel cloud over Peldon (time not stated). At 1200 GMT a northwesterly airstream covered the British Isles between the Azores High, 1030 mb, and a complex area of low pressure over Scandinavia. Showers, locally heavy and thundery, occurred in many areas away from western coasts.

Reports of funnel clouds or a tornado from Peterborough and the Isle of Grain on the 14th were too vague to document.

FC2012Jul15/I *Barry, Glamorgan (51° 23' N 3° 18' W, ST 1066)*

The *Barry & District News* of the 19th July published a photograph taken by Mr Peter Easton at about 1000 GMT of a small short-lived funnel cloud over The Knap.

At 1200 GMT a westerly airstream covered the British Isles between the Azores High, 1028 mb, and a low, 985 mb, in the Norwegian Sea; a shower trough was analysed near the Channel Islands. Showers were fairly widespread over Scotland and Ireland but only isolated elsewhere.

FC2012Jul15/II *Jersey Airport, Channel Islands (49° 13' N 2° 12' W)*

A recent funnel cloud was reported in the 1120 GMT METAR from Jersey Airport.

fc2012Jul18/I *Kirton, Lincolnshire (52° 55' N 0° 04' W, TF 3038)*

Mr Ryan Saunby reported a probable funnel cloud at about 1800 GMT.

At 1800 GMT a low, 998 mb, was moving slowly east across the North Sea and its waving cold front was crossing central and southern England. Scotland had periods of rain during the day; elsewhere there were showers, sometimes heavy and thundery, especially over central and eastern England.

TN2012Jul18 *Soham, Cambridgeshire (52° 20' N 0° 21' E, TL 603723)*

The 1656 GMT SPECI from the USAF at RAF Mildenhall reported a funnel cloud overhead moving east. It was photographed by Mr Sean Searl near Exning, Mr Matthew Ralph near Soham, and Mr Chris Royston from Chippenham (Cambs); all show a well-developed funnel halfway or more to the ground. A report from Mr Todd Unsworth on *ITV News* suggested two funnels.

None of the above reports, however, indicated ground contact, but according to the *Newmarket Journal* of the 26th July it caused 'thousands of pounds of damage' at the Ivor Searle Engineering Works in Regal Lane, Soham. Mr Colin Searle said: "I was upstairs in my office when there was a loud bang. The next thing the wind got up and there was another bang and it raised a bit off the roof and took some brickwork down. It also brought stuff down in the stairwell inside. It only lasted about 15 or 20 seconds but I saw the vortex moving from left to right". Both his own motor car and that of a colleague were lifted a short way off the ground. Force T2.

FC2012Jul18/II *Wattisham Airfield, Suffolk (52° 07' N 0° 57' E, TM 0251)*

A funnel cloud was reported in the 1725 GMT SPECI from RAF Wattisham.

FC2012Jul19/I *Aisby, Lincolnshire (52° 56' N 0° 30' W, TF 0138)*

Mrs Linda Walmsley wrote to us about a funnel cloud seen between 1830 and 1900 GMT from the base of a rotating cloud mass which was moving north to south.

At 1800 GMT a weakening northwesterly airstream covered England and Wales; a weakening occlusion lay across the Midlands. There were showers in places, especially from northwest England to East Anglia.

FC2012Jul19/II *Fordham, Cambridgeshire (52° 18' N 0° 23' E, TL 6370)*

The *East Anglian Daily Times* of the 20th July published a photograph of a well-formed funnel cloud reaching halfway to the ground; it was seen by Mr Phil Kelly at about 1700 GMT. (The time and place are very similar to that of the Soham report for the preceding day, so there might be a dating error.)

FC2012Jul19/III *Botesdale, Suffolk (52° 20' N 1° 00' E, TM 0475)*

A photograph was received from Mr Steve Hunt via Mr Steve Lansdell of TORRO showing a funnel cloud (the end hidden behind nearby trees) at about 1850 GMT during a slight thunderstorm.

FC/TN2012Jul20/I *Haslingden Moor, Lancashire (c 53° 43' N 2° 22' W, SD 7624)*

Mr Vince Heath saw a funnel cloud descend until it looked as though it touched the ground, but he was too far away to confirm this; his photograph showed a fairly long funnel near the distant horizon. The time was about 1215

GMT and it lasted 3-4 minutes.

At 1200 GMT a weak northwesterly airstream covered the British Isles round a small high, 1022 mb, west of Ireland; the previous day's occlusion still lay from northwest England to East Anglia. There were showers and a few thunderstorms over central and eastern England (and isolated ones elsewhere).

FC/TN2012Jul20/II *between Peterborough and Spalding, Lincolnshire (c 52° 41' N 0° 12' W, TF 2211)*

The UKWeatherworld forum included reports of a funnel cloud seen from Peterborough and Spalding between 1120 and 1140 GMT. One of the photographs (unattributed) showed a rope-like funnel reaching most of the way to the ground.

3FC2012Jul20/III *Ely, Cambridgeshire (52° 24' N 0° 16' E, TL 5480)*

Mr Alastair Ross submitted a report of a fairly long funnel cloud seen at 1718 GMT; two more formed over the next 30 minutes, one short, one longer, moving towards Newmarket.

FC2012Jul20/IV *near Battle, East Sussex (c 50° 55' N 0° 28' E, TQ 7416)*

A report was received from Ms Alison Norwood of a short-lived funnel cloud at about 1645 GMT; her photograph showed a short rather ill-defined funnel in the middle distance.

WS+FCs2012Jul20 *Herne Bay, Kent (51° 22' N 1° 08' E, c TR 1868)*

A photograph from Mr Matt Haney showed a long funnel cloud descending behind rooftops, and the *Kent Messenger* (21st July) published a photograph from Ms Stella Shepherd (in Hadleigh Gardens) confirming that it reached the sea surface. The time was 1825 GMT. It was also photographed from Whitstable by Mr Jason Reilly, who observed several funnel clouds, of which only one reached the surface.

FC2012Jul28 *Black Isle, Ross and Cromarty (c 57° 35' N 4° 17' W, NH 6457)*

In an account of the Nairn Show of the 28th July the *Aberdeen Press and Journal* (30th July) mentioned that visitors had seen a 'waterspout' protruding from a storm cloud over the Black Isle in the morning. At 1200 GMT a low, 1001 mb, was almost stationary near northeast Scotland. Showers were widespread over Scotland and Ireland but more scattered elsewhere.

FC2012Jul28? *Aberdeen, Aberdeenshire (57° 09' N 2° 07' W, NJ 9306)*

Mr Sam Thomson reported a funnel cloud over the east side of Aberdeen during an afternoon thunderstorm. He did not give the date but the 28th seems the most likely (SFERIC in the area at 1430 GMT).

FC2012Jul29/I *Sandwick, Mainland, Orkney Islands (59° 03' N 3° 19' W, HY 2519)*

A photograph was received from Mr Neil Ford showing a distant funnel cloud, probably at Sandwick (time not stated).

At 1200 GMT the previous day's low, 1002 mb, remained slow-moving near northeast Scotland. Showers occurred widely during the day, turning thundery in many central and eastern areas.

FC/TN2012Jul29/II *White Cairns, Aberdeenshire (57° 15' N 2° 09' W, NJ 9118)*

The *Aberdeen Evening Express* of the 30th July published photographs taken by Mr Carlo Dambruoso showing a funnel cloud seen the previous morning. It was described as a 'tornado touching down' although this is not apparent from the pictures (which were taken from a distance).

FC/TN2012Jul29/III *SE of Torksey, Lincolnshire (53° 14' N 0° 40' W, SK 8972)*

Mr David Holford-Wright reported a 'tornado' 8 km southeast of Torksey during a thunderstorm at 1430-1435 GMT; the funnel descended three-quarters of the way to the ground.

fc2012Jul29/IV *New Barnet, Greater London (51° 38' N 0° 11' W, TQ 2695)*

The *Barnet & Potters Bar Times* (30th July) showed a film taken by Mr Michael Riddle looking southeast from New Barnet Railway Station at 1950 GMT in which ragged lowering of the cloudbase appears to show rotation. There was a thunderstorm at the time. A report from Ms Joanna Todd, who observed rotation in a thundercloud to the east of Borehamwood at 1915-1935 GMT, probably relates to the same storm.

FC2012Jul29/V *Spalding, Lincolnshire (c 52° 47' N 0° 10' W, TF 2423)*

Mr Dean Graham submitted a report of a long thin 'tornado' seen behind him as he was travelling north out of Spalding at about 1700 GMT.

fc?2012Jul29 *Bury St Edmunds, Suffolk (52° 15' N 0° 42' E, TL 8465)*

The *Bury Free Press* of the 3rd August published a photograph sent in by Mr Simon Pettitt. It was taken at 1930 GMT from the Howard Estate, and shows what was either a large funnel cloud, the base hidden behind trees, or a column of smoke.

FC2012Jul29/VI *Sheringham, Norfolk (c 52° 56' N 1° 12' E, TG 1543)*

Tim Prosser of TORRO sent us a photograph taken by his brother-in-law just before 1900 GMT showing a short thick funnel cloud out at sea.

Reports of funnel clouds at Basingstoke and Taplow on the 29th proved unfounded.

WS+FCs2012Jul30 *Langdon Bay, Dover, Kent (51° 08' N 1° 21' E, TR 3442)*

The *Kent Messenger* (31st July) published a photograph taken by Mr Sean Haughton showing a well-formed funnel cloud just off the coast at 0920 GMT; and other pictures received directly from Mr Haughton showed disturbance of the water surface, although the (very contorted) visible funnel appeared not to reach more than halfway to the sea. There were also reports that up to three funnel clouds were seen simultaneously. At 1200 GMT a westerly airstream covered the British Isles between the previous day's low, now 1006 mb, still near north Scotland and a ridge from the Azores to the Bay of Biscay. There were further showers, mainly in central, eastern, and northern areas, where some were again thundery.

FCs2012Jul31 *Kirkwall Airport, Orkney Islands (c 58° 57' N 2° 54' W, HY 4808)*

Funnel clouds in the vicinity were reported in the 1250, 1320, and 1350 GMT METARs from Kirkwall Airport. At 1200 GMT a low, 991 mb, was developing west of Ireland while an old low, 1004 mb, lay over Norway; Orkney was in a col between them. Rain was spreading into Ireland and western and southern parts of Britain, ahead of which there were a few showers over Scotland.

**Addition to report for January 2007 (published in *Int.J.Meteorology*, U.K. vol. 32 pp. 317-320)**

WS2007Jan18 *Solent, Portsmouth, Hampshire (c 50° 46' N 1° 06' W, SZ 6397)*

We are grateful to Peter Kirk of TORRO for drawing our attention to a photograph of a waterspout over the Solent seen from Southsea Common (photographer's name and time of day not known).

We were also referred to a report on the UKWeatherworld forum of a funnel cloud and waterspout near Portsmouth at 1930 GMT on 5 June 2008, but the photographs were unconvincing.



# TORRO TORNADO DIVISION REPORT: August 2012

BY PAUL R. BROWN AND G.TERENCE MEADEN

In common with the two preceding summer months, August 2012 was unsettled and wet, but with winds often from the south it was somewhat warmer. Four tornadoes were reported, one of which began as a waterspout; there were again numerous reports of funnel clouds - 36 in all; and there was one whirlwind of unknown type. We also know of one funnel cloud and one tornado (unconfirmed at the time of writing) in the Irish Republic.

## fc2012Aug02 *Alfreton, Derbyshire (53° 05' N 1° 23' W, SK 4155)*

Ms Naomi Smith reported rotation that descended as a funnel cloud for about two minutes during a thunderstorm at 2015 GMT. At 1800 GMT a low, 992 mb, was slow-moving to the west of Ireland. There were scattered showers during the day, especially over England, where some were heavy and thundery.

## FC2012Aug04/I *Helensburgh, Dunbarton (56° 00' N 4° 45' W, NS 2982)*

The *Helensburgh Advertiser* (6th August) published a picture of a funnel cloud taken by Ms Kyle Gallacher, described as 'a suspected tornado ... in the distance'. The picture shows a long slanting funnel reaching more than halfway to the ground (time not stated).

At 1200 GMT the low of the 2nd was centred over southwest Ireland, 1002 mb. Showers and thunderstorms occurred widely during the day.

## FC2012Aug04/II *Douglas, Isle of Man (54° 09' N 4° 29' W, SC 3875)*

Mr Joshua Risker reported a funnel cloud 'very close to the ground' at 1726 GMT during a heavy shower; and *Isle of Man Today* (18th August) published a photograph of it taken from a distance by Ms Emma Butler.

## FC2012Aug04/III *Drongan, Ayrshire (55° 26' N 4° 28' W, NS 4418)*

Ms Samantha Wilson photographed a long funnel cloud reaching at least halfway to the ground at about 1415 GMT; it was followed by a thunderstorm.

## FCs2012Aug04/IV *Glasgow, Lanarkshire (c 55° 49' N 4° 19' W, NS 5560)*

Jeff Blackshaw of TORRO saw a funnel cloud southwest of Glasgow city centre, at 1712 GMT, apparently unrelated to the Cumbernauld one (see below), although the time was the same. He also informed us that the *Scottish Sunday Mail* reported a funnel cloud further to the west between Johnstone and Kilbarchan just after 1700 GMT during a thunderstorm with hail.

fc2012Aug04/V *Hamilton, Lanarkshire (55° 46' N 4° 02' W, NS 7354)*

The *Hamilton Advertiser* of the 9th August reported that 'something that looked like a tornado' had been seen in the sky from Chatelherault Country Park at about 1630 GMT. This may relate to one of the other funnel clouds in central Scotland, but the location and timing are different enough to make this uncertain. (A photograph was said to have been taken, but was not published.)

FC2012Aug04/VI *Cumbernauld area, Dunbarton (c 55° 57' N 3° 59' W, NS 7674)*

Reports of funnel clouds were received from Mr Kevin Baker at Kirkintilloch, Ms Helen Anderson at Cumbernauld, and Ms Beth Lynagh at Gartcosh (among others). The time was between 1705 and 1715 GMT, and the various photographs show a fairly long well-formed funnel.

FC2012Aug04/VII *Cader Idris, Merionethshire (c 52° 42' N 3° 55' W, SH 7113)*

John Mason of TORRO photographed a distant funnel cloud over the Cader Idris range in mid-afternoon.

2WS-TN2012Aug04 *Clevedon, Somerset (51° 26' N 2° 52' W, ST 401717)*

Mr Lee Thorn sent us a report of two waterspouts, at least one of which came onshore near Beach Road before dispersing. There was a heavy thunderstorm at the time, which was late afternoon.

FC2012Aug04/VIII *Coningsby, Lincolnshire (53° 05' N 0° 11' W, TF 2256)*

A funnel cloud was reported in the 1543 GMT SPECI from RAF Coningsby.

2FC2012Aug05/I *Wadebridge, Cornwall (c 50° 31' N 4° 51' W, SW 9872)*

John Pask of TORRO photographed two funnel clouds, one about 4 km north of Wadebridge at 1040 GMT, the other 0.5 km to the southwest at 1055 GMT - the first short and thick, the second long and contorted.

At 1200 GMT the previous day's low, now 1004 mb, continued to drift very slowly east over the British Isles while gradually filling, and there were further showers and thunderstorms in many areas. This sluggish cyclonic circulation was ideal for funnel cloud formation, and reports were received from many parts of the country.

FC2012Aug05/II *near Kilmacolm, Renfrewshire (55° 54' N 4° 42' W, NS 3170)*

A photograph of this funnel cloud appeared in the *Greenock Telegraph* of the 7th August. It was taken by Mr Sammy Ross at Faulds between Kilmacolm and Port Glasgow at about 1600 GMT, and shows the funnel about halfway to the ground.

FC2012Aug05/III *Newton Tracey, Devon (51° 01' N 4° 06' W, SS 5226)*

The *North Devon Gazette* of the 6th August published a photograph of a long slender funnel cloud taken by Mr Frederick Barrow in the afternoon. It was also reported in *This is North Devon*, which published a picture taken by Mr Nick Woodrow looking inland from the Bristol Channel.

FC2012Aug05/IV *Mennock Pass, Sanquhar, Dumfriesshire (55° 21' N 3° 53' W, NS 8107)*

The *Dumfries & Galloway Standard* (8th August) reported that Mr Barrie Wilson photographed a funnel cloud at about 1400 GMT over the Mennock Pass (the picture was not published in the electronic version of the newspaper).

FC/WS2012Aug05/V *Morecambe Bay, Cumbria (c 54° 07' N 2° 59' W, SD 3669)*

The *Westmorland Gazette* (8th August) published photographs taken by Mr Tom Lynch showing a funnel cloud over Morecambe Bay, seen from near Greenodd, which he thought would have reached the sea surface, but this was hidden from view (time not stated).

FC2012Aug05/VI *Stoke-on-Trent, Staffordshire (53° 00' N 2° 10' W, SJ 8944)*

The *Staffordshire Sentinel* (7th August) published a photograph taken by Mr Dave and Ms Angie Preece showing a slender vertical funnel cloud seen from the Fenton district of Stoke in the evening.

FC/TN2012Aug05/VII *Inkberrow area, Worcestershire (c 52° 12' N 2° 00' W, SP 0055)*

Mr Steve Green contacted us to report a distant 'tornado' that he saw from the Malvern Hills at about 1330 GMT; from his viewpoint it appeared to be about 10 miles east of Worcester, which would place it somewhere near Inkberrow, and it looked as though it reached the ground. There was a thunderstorm at the time. (His photograph was unclear but appears to support the description.)

FC2012Aug05/VIII *near Ravensworth, North Yorkshire (c 54° 27' N 1° 47' W, NZ 1407)*

A national newspaper published a photograph of a long funnel cloud above woodland near Ravensworth (no other details known).

2FC2012Aug05/IX *Ashbourne area, Derbyshire (c 53° 01' N 1° 45' W, SK 1746)*

Mr John Baxby photographed a fairly long funnel cloud seen in the distance towards Ashbourne from Bunster Hill (SK 1451) between 1215 and 1220 GMT. According to the account in the *Ashbourne News Telegraph* (8th August), a small one formed and dissipated followed by this more substantial one.

FC2012Aug05/X Wakefield, West Riding of Yorkshire (53° 41' N 1° 30' W, SE 3320)

This funnel cloud was quite widely reported, e.g. by Mr William Northcote, Mr Andy Bennett, and Mr John Brayshaw, at Wakefield, and Ms Sarah Clarke at Dewsbury. The many pictures received show a long funnel reaching at least halfway to the ground. Various times were given but it appears to have been about 1550 GMT.

WW2012Aug05 Hetton le Hole, County Durham (54° 49' N 1° 26' W, NZ 360476)

The BBC published an anonymous film taken at Hetton Lyons Country Park showing a whirlwind crossing a lake and entering woods (time not stated).

FC2012Aug05/XI Southsea, Portsmouth, Hampshire (c 50° 46' N 1° 06' W, SZ 6497)

The *News (Portsmouth)* of 5th August published a photograph taken by Mr Paul Cady at 0730 GMT showing a funnel cloud off the coast towards the Isle of Wight; the picture shows a long funnel but it is not possible to tell if it reached the sea.

FC2012Aug05/XII Stoke Doyle, Northamptonshire (52° 28' N 0° 30' W, TL 0286)

Mr Jamie Lumsdon reported a 'tornado' that he said descended to within 100 m of the ground at Stoke Doyle at 1230 GMT; and Mr Nathan Freeman reported a funnel cloud at Thrapston (SP 9978) at 1300 GMT. There was thunder and hail about the same time.

A report of a small funnel cloud at Sale, Cheshire, on the 5th was too uncertain to count.

FC2012Aug06/I Kilpatrick Hills, Dunbarton (c 55° 57' N 4° 27' W, NS 4776)

Mr John McHugh photographed a funnel cloud descending towards the tops of the Kilpatrick Hills; and *Scottish Television* published a similar picture taken by Mr Darren Ross (time unknown).

At 1200 GMT the previous day's low, 1002 mb, was moving away across the North Sea and a weak northwesterly airflow covered England and Wales. There were further showers and thunderstorms but the west became dry in the afternoon.

FC2012Aug06/II near Eaglescott Airfield, Burrington, Devon (c 50° 56' N 4° 00' W, SS 6016)

The *North Devon Journal* of the 23rd August published an account with photograph of a funnel cloud seen from an aeroplane (photographer Mr Terry Gilbert), apparently in the afternoon. The date was given as Monday 6th August, but the proximity to Newton Tracey (see above for 5th) suggests a possible

dating error.

FC2012Aug06/III *between Dalbeattie and Haugh of Urr, Kirkcudbrightshire (c 54° 57' N 3° 50' W, NX 8263)*

Jeff Blackshaw of TORRO informed us that a Scottish national newspaper reported a funnel cloud close to the ground between Dalbeattie and Haugh of Urr (time unknown).

FC/TN2012Aug06/IV *west of Byrness, Redesdale Forest, Northumberland (c 55° 19' N 2° 23' W, NT 7602)*

Mr Rodney Groom submitted a report of a 'tornado' which appeared to touch the ground west of Byrness in Redesdale Forest, but the end was out of view; it retracted then descended a second time. The time was 1250 GMT.

FC2012Aug06/V *Middleton St George (Tees-side) Airport, County Durham (54° 31' N 1° 26' W, NZ 3713)*

A funnel cloud and thunderstorm were reported in the 1220 GMT METAR from Tees-side Airport.

FC2012Aug06/VI *Peterlee, County Durham (54° 45' N 1° 21' W, NZ 4240)*

An anonymous and untimed photograph was received showing a rather indistinct funnel cloud over Peterlee (possibly the same as the Tees-side one).

fc2012Aug07 *Bucksburn, Aberdeenshire (57° 11' N 2° 11' W, NJ 8909)*

The *Aberdeen Evening Express* of the 8th August showed anonymous film of a 'waterspout' seen at Bucksburn at 1047 GMT the previous day. The film appears to show a broad funnel descending behind trees in the middle distance (whether it was over the sea cannot be determined). At 1200 GMT a slack pressure pattern covered most of Britain but the tail-end of the earlier low pressure system was still evident over eastern Scotland, where there were further showers (there were thunderstorms over northeast England).

tn?2012Aug13 *Melling area, Lancashire (c 53° 30' N 2° 56' W, SD 3800)*

Ms Rebecca Tolputt submitted a report of a 'tornado' that she saw from a distance from Kirkby at 2115 GMT. A thunderstorm had just passed to the west, and the 'tornado' was about three miles west of the observer, viz. at or near Melling. It was described as 'very cloud like', there appeared to be some debris in the lower regions, it was moving very slowly in a northwest direction, and appeared to make contact with the ground within a minute of the funnel appearing; it lasted about 30 seconds.

At 1800 GMT a frontal system was moving northeast across the British Isles associated with a low, 994 mb, northwest of Ireland. Precipitation was showery, locally thundery, in nature, and not clearly related to the fronts.

fc2012Aug14 *Omagh, County Tyrone (c 54° 35' N 7° 27' W, H 3670)*

Mr Stephen Fisher reported a probable distant funnel cloud to the west of Omagh, above Pigeon Top (Pollnalaght) Mountain, at 1812 GMT, which occurred just after a heavy shower and lasted 2-3 minutes. At 1800 GMT a southeasterly airstream covered the British Isles ahead of a deepening depression, 993 mb, approaching southwest Ireland. Most areas were dry at this time but there were some showers (locally thundery) in the west and north.

TN2012Aug15 *Little Lever to Breightmet, Bolton, Lancashire (53° 33' N 2° 22' W to 53° 35' N 2° 23' W, SD 754067 to SD 743093)*

Reports on the BBC and elsewhere referred to a suspected tornado that lifted roofs and overturned a caravan and heavy machinery (manure spreader) at a farm in Darcy Lever, Bolton. Tim Prosser and Justin Parker of TORRO inspected the area on the 19th August and confirmed a tornado track of 3 km from south to north - from Little Lever (Edinburgh Road) to Breightmet. The time was 1445 GMT. Force T4. The main effects were at the aforementioned farm (Newholme Farm, SD 743082), where in addition to the caravan and machinery, a horse and rider were briefly levitated, the horse suffering a leg injury. The vortex, with anticlockwise (cyclonic) rotation, was observed travelling northward across a field, where it twisted a tree and flattened grass.

At 1200 GMT an unseasonably vigorous depression of 978 mb was moving north near southwest Ireland and its frontal system was crossing Ireland, Wales, and England; the cold front was over Bolton at the time of the tornado. There was moderate to heavy rain (locally thundery) on the fronts, and further showers in the southwest near the low centre.

A distant funnel cloud reported near Armthorpe, West Riding of Yorkshire, on the 19th was probably a column of smoke.

FC2012Aug21/I *Ballymena area, County Antrim (c 54° 51' N 6° 17' W, D 1002)*

Mr Martin McKenna photographed a well-formed funnel cloud 10-20 miles east of Maghera between 1520 and 1535 GMT. This would place it somewhere near Ballymena. Mr Jonathan Ross sent us a report of a funnel cloud seen from north Belfast at 1500 GMT, which could have been the same one (allowing for a timing error).

At 1200 GMT a weak southwesterly airstream with shower troughs covered the British Isles, associated with a low, 999 mb, south of Iceland; many of the showers were thundery.

FC2012Aug21/II *Kirriemuir, Angus (56° 40' N 3° 01' W, NO 3853)*

The *Courier* (22nd August) published a photograph of a long slender funnel cloud taken by Mr Mike Smith at about 1300 GMT.

Wind2012Aug21 *Trowell, Nottinghamshire (52° 57' N 1° 17' W, SK 4839)*

Mr Charlie Waters sent in a report of a sudden wind that he experienced at 1700 GMT while walking into Trowell from the east. There was a thunderstorm moving north ahead of him, and a rotating 'grey area' moving towards him; as this passed over he heard a noise like an aeroplane and was engulfed in a very strong wind that tore branches from trees and threw other debris about. This was followed by intense rain and hail. (It happened at a roundabout on the road, but we have not identified the exact location.)

FC/TN2012Aug25 *between Stalybridge and Mossley, Cheshire (53° 30' N 2° 03' W, SD 9700)*

Mr James Doodson reported a funnel cloud that 'touched down on the hill and went up'; this was between Stalybridge and Mossley at 1710 GMT. He later saw bushes and branches on the road. At 1800 GMT a low, 1000 mb, was centred off the East Anglian coast, having moved slowly east across England during the day. Thunderstorms occurred widely over much of England from late morning onwards.

FC2012Aug29/I *Newquay, Cornwall (50° 24' N 5° 05' W, SW 8161)*

Mr Corbyn Jones reported a funnel cloud in the early afternoon.

At 1200 GMT a low, 997 mb, was moving slowly east into Ireland; its active cold front was crossing England followed by a shower trough. There was moderate to heavy rain on the front and heavy thundery showers behind.

3FC2012Aug29/II *Clevedon area, Somerset (c 51° 27' N 2° 49' W, ST 4373)*

Funnel clouds were reported from various places on the north Somerset side of the Severn Estuary in the evening of the 29th. Mr Jim Forrest at Weston-super-Mare reported three simultaneous funnels seen at 1745 GMT; and a photograph from Mr Andy Wilson at Portishead showed two, possibly three, in the sky. They were also reported in the 1750 GMT METAR from Bristol (Lulsgate) Airport. The many photographs received show the funnels between a third and a half of the way to the ground.

FC2012Aug29/III *Jersey Airport, Channel Islands (49° 13' N 2° 12' W)*

A recent funnel cloud was reported in the 1920 GMT METAR from Jersey Airport.

TN2012Aug29/IV *New Milton, Hampshire (50° 45' N 1° 39' W, c SZ 247953)*

The *Southern Daily Echo* of the 30th and 31st August published details of a tornado that occurred in Osborne Road, New Milton, at about 1030 GMT. A conservatory roof was blown off and debris from it broke a window in a neighbouring house. The occupant of the damaged house, Mr Tony Morris,

said: "It started raining and got really dark. Then I heard a roaring noise that sounded like an explosion or a plane going over". Force about T1.

TN2012Aug29/II *North Standen, Hungerford, Berkshire (51° 24' N 1° 33' W, SU 313672)*

Mr Alan Heasman (meteorologist) drew our attention to this tornado, which occurred at 1036 GMT. It lasted about one minute, during which 10-20 mature trees were brought down causing damage to farm sheds and power lines as they fell; many other trees lost limbs. The total track length was about 500 m but most of the damage was along a 50-metre length in a copse; the width was 10-20 m. Force about T2.

FC2012Aug31 *Jersey Airport, Channel Islands (49° 13' N 2° 12' W)*

A recent funnel cloud was reported in the 0720 GMT METAR from Jersey Airport. At 0600 GMT a ridge of high pressure was crossing the British Isles associated with a high, 1034 mb, southwest of Ireland. Rain was coming in to western parts of Ireland and Scotland but elsewhere it was a fine morning.

*Addition to report for August 2011 (published in Int.J.Meteorology, U.K. vol. 36 pp. 343-348)*

FC2011Aug26 *Kilwinning, Ayrshire (55° 39' N 4° 42' W, NS 3043)*

Mr Bill Ward photographed a funnel cloud at 1458 GMT, which appears to reach one third of the way to the ground. We thank Jonathan Webb of TORRO for bringing this late report to our attention.

### **Whirlwinds in the Irish Republic**

FC2012Aug09 *Bunlahy, near Granard, County Longford (53° 47' N 7° 35' W, N 2782)*

The *Longford Leader* of the 15th August published a photograph of a vertical funnel cloud about halfway to the ground taken by Mr Robert Browne in the afternoon of the 9th. At 1200 GMT an anticyclone covered the British Isles, with centre 1028 mb in the Irish Sea. Many inland parts of Ireland were dry and rather warm but coasts were cloudier and cooler.

tn2012Aug29 *Dunlavin, County Wicklow (53° 03' N 6° 43' W, N 8601)*

The *Wicklow News* of the 31st August reported that a 'freak wind, most likely a tornado' damaged garden furniture and television aerials, and blew down trees in Dunlavin in the early hours of Wednesday; there was also some damage to buildings. See the Newquay entry above for the synoptic situation.

## WEATHER IMAGES: LENTICULAR CLOUDS IN WEST YORKSHIRE

Matt Clark of TORRO took the photos below and also the ones on the front and back covers of the journal on the 22 December 2011. He said “This was by far the most amazing display of altocumulus lenticularis (mountain wave) clouds that I’ve ever seen. These were taken from my parents’ house in Burley-in-Wharfedale, near Ilkley, West Yorkshire. I was looking roughly north, and the clouds seemed to be forming roughly over, or just to the lee of, the main Pennine ridge of North Yorkshire. They were visible most of the day once the low cloud cleared, but the ones shown in the photographs in this Journal occurred from about 1.30 - 3.30 pm, with the peak of the show around 2.30pm.”

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