TORRO SITE INVESTIGATION

SUMMARY REPORT

Seaford, East Sussex

6 December 2025

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Site Investigation summary

Cause of damage:	Tornado
Strength:	T3
Track Length:	1.3km
Maximum measured width:	45m
Time/ duration	0135 UTC +/-10min
Map Location/postcode	BN25 XXX

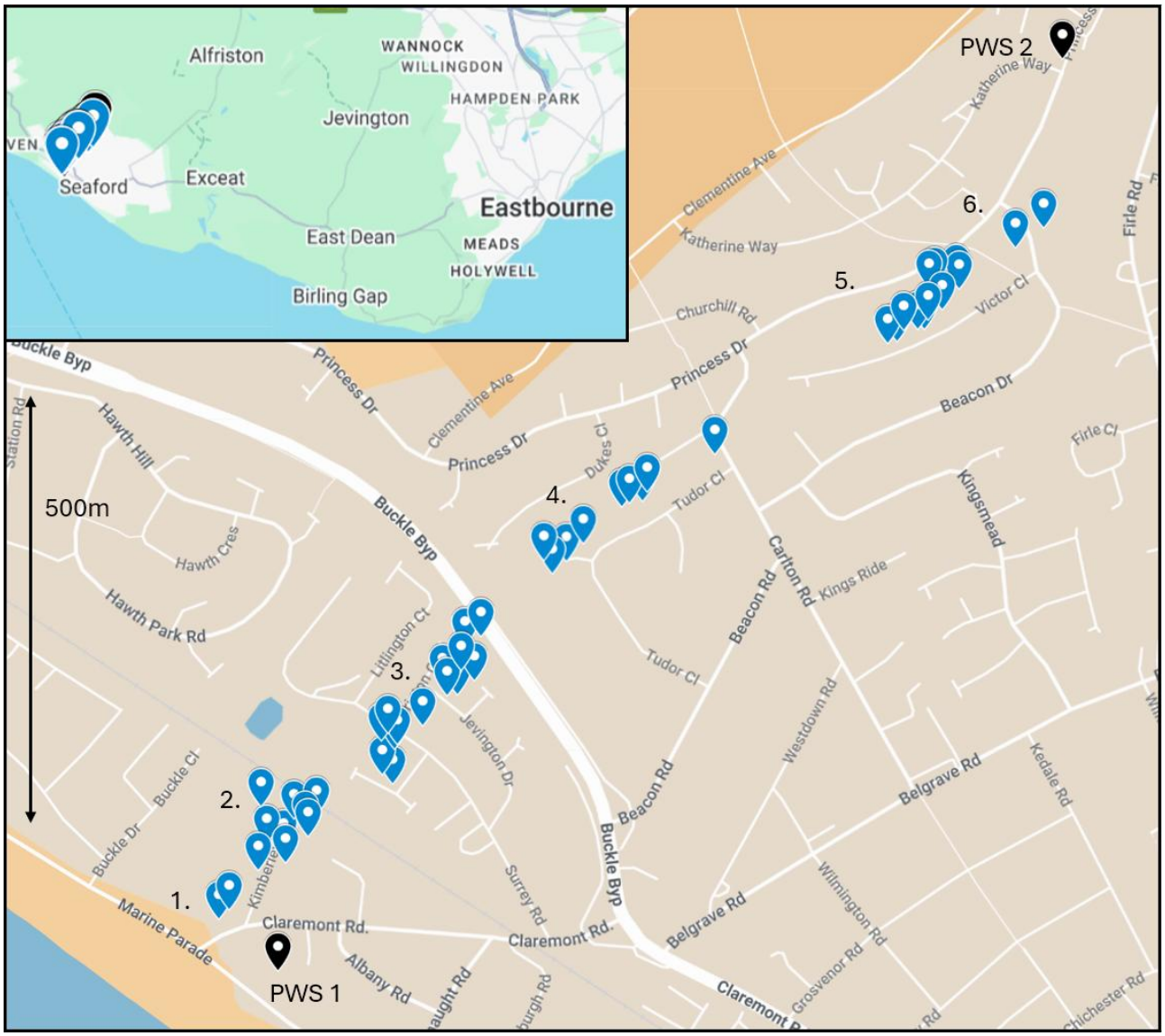

Figure 1: Damage track of the Seaford tornado (2025). Numbers correspond to key damage indicators detailed below. PWS 1 and PWS 2 correspond to locations of personal weather stations, data shown in Figure 4. Map data ©2025 Google.

Key damage indicators

A site investigation was carried out on 7 December 2025 under challenging weather conditions. A narrow damage path was identified, beginning at a beach-front property and extending 1.3 km through Seaford.

Most residents who were interviewed either during the site investigation visit or subsequently, estimated the time of the tornado to be around 0130 UTC (range 0100-0200 UTC and timelapse doorbell photos (location: 50.7774, 0.0880) showed debris which caused windows to be smashed was not evident at 0130 UTC but was evident at 0135 UTC. It is worth noting that one doorbell cam picked up high winds, timestamped at 0354. However, the homeowners noted that the timestamp was not accurate.

During the survey, approximately 40 properties were found to have sustained damage, mostly minor roof and garden losses, though several buildings showed more significant impacts. These are summarised below. It was reported by members of the public that some roof damage was repaired on the same day or that damage occurred to the back of properties and therefore may not have been visible. Therefore, it is likely that some damage was not mapped during the survey.

1. The first evidence of damage was observed at Lat 50.7764, Lon 0.0867 (hereafter geographic locations are given as Lat,Lon pairs) where heavy garden pots had been blown over and smashed. No structural damage to nearby buildings was identified. As this location is approximately 40m inland from the road bordering the beach, it is presumed that a waterspout made landfall at this point. **Intensity rating: T1**

2. Around 70m further inland, damage intensified and became more evident. Around 50.7771, 0.0879 minor roof damage and fallen fences were observed. Ornamental palm trees were observed in one location to have been snapped through the trunks.

   At 50.7772, 0.0882, a small number of ridge tiles had been lifted from the roof of a house, a shed was destroyed, and the felt covering of a flat roof had been peeled away. A small boat on a trailer had been rotated anticlockwise. Firewood, including furniture drawers had been lofted and carried approximately 20m, striking both a car window and a house window and causing them to smash. Wheelie bins were blown through a well-constructed, securely mounted wooden gate which was destroyed. **Intensity rating: T3**

3. In the area between 50.778, 0.089 and 50.778, 0.091, damage found was consistent with **intensity rating: T1/T2**. Here, roof damage across several properties was limited to a small number of tiles removed by the tornado; however, on at least one house many tiles had been displaced (partially lifted), rather than fully lost. As a result, at this property, and perhaps others, roof repairs were likely to be more extensive than the

intensity rating might suggest.
Two low single-skin brick walls had also been blown over. Scattered pieces of fascia or barge-board were found at various locations along the roads.

A homeowner living at 50.7792, 0.0908 described the event as follows:

"*Multiple tiles off back house. At about 1.45 am yesterday morning I was awakened by what sounded like a train approaching at speed followed by what sounded like a very loud explosion. The house actually shook and I could hear what sounded like tiles falling on the ground, then silence apart from very heavy rainfall. The whole episode was over in no more than six or seven seconds.*

As a result of this strike we have lost many tiles off the roof of our house, my greenhouse was totally destroyed, and garden furniture, pots and several fence panels had been taken out. A 25 foot olive tree was reduced to about 9 foot, the rest being deposited on the fence separating us from the A259. Tiles and roofing felt was scattered across the rear garden."

The described olive tree and roof damage was observed from the A259 though direct access to the tree was restricted and its condition prior to the tornado could not be determined. **Intensity rating: T2**

4. At 50.7801, 0.0925, a severely damaged trampoline was found on the footpath of Tudor Close. Although the trampolines point of origin was unclear, some drag marks were observed on the wet lawn to the west of it. Nearby, two houses were noted to have multiple missing roof tiles.

5. Homeowners at 50.7808, 0.0937, further along Tudor Close, reported that their property was one of several along the road to have sustained damage, primarily to the rear side of the houses. It is therefore possible that additional, unreported damage also occurred to properties along Dukes Close to the north. The damage at 50.7808, 0.0937 included a smashed car windscreen due to debris impact, roof damage which may require full replacement and a barbeque gas cannister lifted approximately a foot from its original location. **Intensity rating: T2**

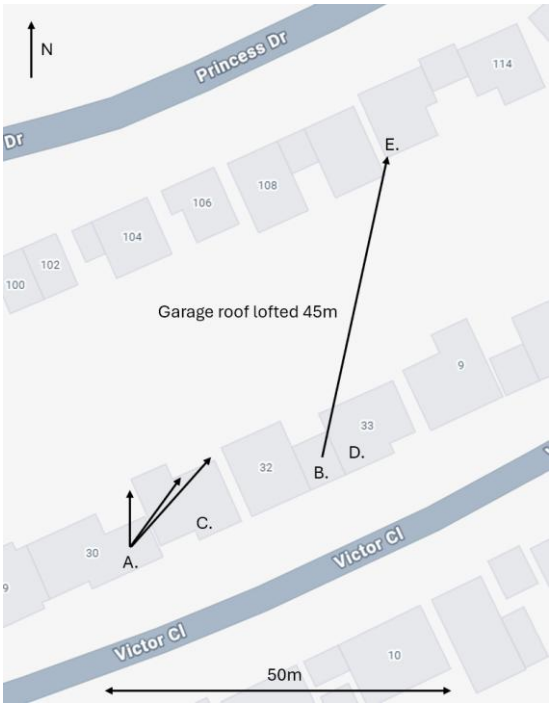

Figure 2: Direction of travel of garage roofs which were lofted from 50.7825, 0.098 (A) and 50.7826, 0.0981 (B). 'C' and 'D' were houses impacted by these roofs. Map data ©2025 Google.

At 50.7825, 0.098 'A' a pair of attached garages had lost their roofs (Figure 2) House 'C' immediately east of 'A' (50.7826, 0.0981) sustained extensive rear roof damage primarily from impact by the garage roof from 'A'. A hole through the tiles exposed rafters over ~5% of the north face and several tiles were missing from the north-east corner. Part of the garage roof leaned against the conservatory, with the remainder on the ground next to the north-east corner. Inside the house, a hole in the living room ceiling revealed the sky and rainwater was pouring through with tiles scattered below.

The attached garages 'B' at 50.7826, 0.0984 also lost their roofs, and the separating wall between the garages was damaged and beginning to collapse south-westwards The adjacent house 'D' suffered roof damage, which caused water ingress impacting the electrics. The garage roof from 'B' was lofted ~45 m striking house 'E', creating a large hole in the south-west corner of the roof and knocking down some bricks in the gable end. Photographs of this damage are available to TORRO members but are not available publicly. **Intensity rating: T3**

6. The end of the damage track appeared to be just north of 50.7836, 0.1004, where the most northerly damage was reported. This property lost some roof tiles and the owners noted that there was some fence damage in the rear gardens to the north. During the site investigation, roads between this location and Seaford golf club were walked and

enquiries were made at the golf club, which returned no results. No further damage was observed beyond this point.

Meteorological summary

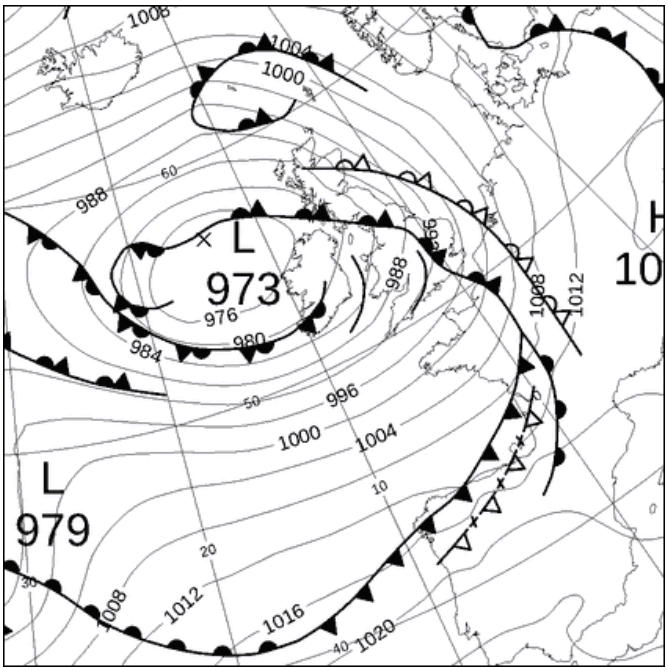

Figure 3: Section of the UKMO ASXX valid 0000 UTC 6 December 2025. Original: Crown copyright.

This event likely occurred in the wake of the occluded front marked on the 00UTC Met Office analysis, probably coincident with the annotated trough line (see Figure 3). Strong zonal flow was in place over the Channel and southern England with a low pressure centre west of Ireland. Typically for this synoptic situation several troughs, with varying degrees of linear organisation were embedded in the area of low geo-potential height and westerly flow. Two are visible in the 0130 UTC network radar imagery shown in Figure 4.

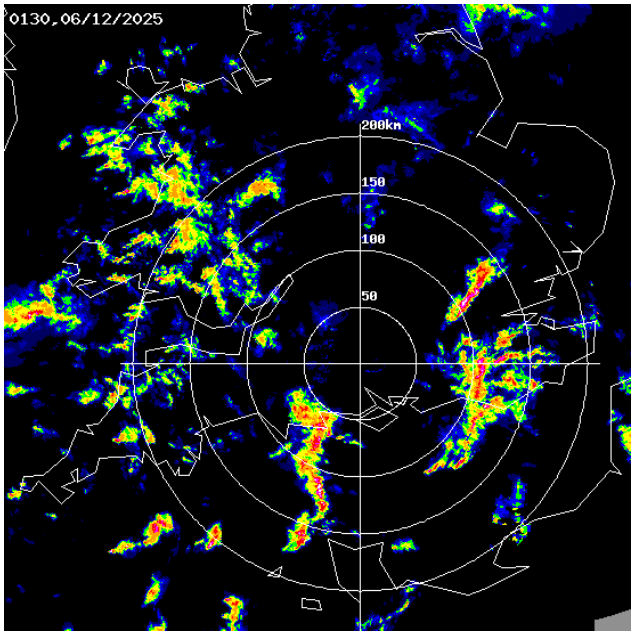

Figure 4: Snapshot of 5-km network radar imagery at 0130 UTC 6 December 2025.

Given eyewitness accounts, the tornado event likely occurred coincident with the trough over south-east England at around 0130 UTC, however there is no clear Doppler couplet apparent in imagery from the Thurnham, Kent radar in lowest elevation scans timed at 0121, 0131 and 0141. It is possible the scans at 10-min intervals missed the event or the feature was so shallow as to be below the radar beam (height approx 1200m at this range). Reflectivity echoes are reasonably strong and suggest 'single-cell' morphology, embedded within the quasi-linear organised trough.

In contrast the passage over Seaford of an elongated cell with a hook-echo at ~0330 exhibits a distinct Doppler couplet in the 0341 scan from Thurnham. Video evidence suggests that high winds occurred coincident with this feature.

A profile from the 00Z GFS model run indicates that low-level wind shear was in-place with 0-1km storm relative helicity of ~130m^2s^{-2} allowing marginal storm organisation (Bulk Richardson Number ~27m^2s^{-2}). Surface-Based CAPE was less than 50J/Kg. However, increased surface friction on the coast and higher sea surface temperatures may have enhanced these nominal values.

Comments

1 The relevant forum thread for the event analysis: TORRO Forum ACCESS RESTRICTED TO TORRO MEMBERS.
2 Damage categorised as being indicative of a T3 tornado entirely secondary damage resulting from debris impact rather than direct tornado winds.

3 Given the proximity of the first points of damage to the beach, it is possible that this tornado started as a waterspout which made landfall.

4 A personal weather station (PWS 1 on Figure 1) at 50.7758, 0.0877 showed a wind gust spike of 121kph (75mph, 34m/s) at 0135 (See Figure 5) The PWS is mounted from a building on the seafront ~90m to the east of the first observed damage. Another PWS (PWS2) located in a garden at 50.7856, 0.1008, 200m to the NNE of the last observed damage point does not show a sudden increase in wind gust speed.

PWS 1 location: 50.7758, 0.0877

PWS 2 location: 50.7856, 0.1008

Figure 5. PWS 1 shows a large spike in wind gust speed to 121.3 kph 75mph, 34m/s) (Credit Lorna and Alex Winder). PWS 2 does not show the same spike. (Credit Colin Andrews)

5 Thank you to all the members of public who contacted TORRO and all those who aided the site investigation. Their contributions added greatly to the site investigation.