

Best Track Committee Re-Analysis Comments for 1943

**[Replies to comments are in boldface, brackets and indented – CWL – February 2013]**

General comments:

1. In some cases there are no binder maps for the pre-genesis days. Please include binder maps for at least one day before the current or revised genesis times to aid the evaluation of the genesis times and places.

**[The pre-genesis maps have now been included for all of the tropical cyclones.]**

2. The lack of data caused by World War II is very problematic. Presumably the observations and ship logs from this period still exist somewhere in an old War Department archive. There is a need to find contacts inside the Department of Defense who can find data to fill in the gaps. There is also a need to find similar contacts in the British and French governments.

**[Efforts have been ongoing within the International Comprehensive Ocean-Atmosphere Data Set to obtain and incorporate World War II (and I) observations from multiple countries to help fill in these gaps. However, this an extremely labor intensive project which is still underway: [http://icoads.noaa.gov/esm\\_dec93\\_sec2.html](http://icoads.noaa.gov/esm_dec93_sec2.html) .]**

1943 Storm #1:

1. The committee concurs with the proposed new genesis time.

**[Note that the microfilm maps have become available for this system, which were not used previously. This gave more information to indicate that the original genesis time at 18Z on the 25<sup>th</sup> is more appropriate.]**

2. Given the lack of data near the center, what is the basis for the proposed track changes on 25-26 July? Is it appropriate to add a loop to the track at that time? Just showing a slow motion would be preferable.

**[Agreed. A slow motion is now indicated on those dates.]**

3. The committee concurs with the increased landfall intensity. On a related issue, the committee is concerned that the stated 275 n mi radius of the outermost closed isobar (ROCI) at landfall is too large. The distance might be 275 n mi to the west-southwest, but seems to be much smaller than that to the east. An average figure might be better.

**[The value of the ROCI is supposed to be an average radii. It is agreed to revise this to a smaller 250 nm value.]**

4. The daily metadata for 27 July has a 64 kt/988 mb observation for Galveston at 0630 UTC. Is the time of this correct, or should it be 1630 UTC? Note that the observation is stronger than that given in the Original Monthly Record (OMR) summary of the storm or in the OMR extremes for the month. Please clarify this.

**[There was some confusion with regards to the Galveston Airport Office (run by the Army) versus the Galveston City Office (run by the Weather Bureau). It is cleared up now that the peak observations from the airport were a simultaneous WNW 64 kt (1 min wind) with 988 mb at 1845Z and from the city were a NW 58 kt (1 min wind) around 18Z with 980 mb at 1845Z.]**

5. In the daily metadata for 29 July, there is a reference to a 1002 mb pressure in El Paso, Texas. Please explain the relevance of this observation or delete it.

**[It is not relevant, so it is deleted.]**

6. Please provide a metadata section for 30 July and a better explanation of why the track was extended until 30 July.

**[Given how vigorous the circulation of the cyclone remained at 12Z on the 29th, it is unlikely that the system dissipated within 12 hours as shown in HURDAT originally. However, there is no indication of the system still being present at 12Z on the 30th. Thus the dissipation is now analyzed to have occurred after 00Z on the 30th, six hours later than originally indicated.]**

7. There are a couple of typos in the last paragraph of the metadata summary: In the first sentence, insert “landfall” after “hurricane made”, and in the last sentence of this same paragraph insert “later” after “six hours”.

**[Done.]**

1943 Storm #2:

1. The rather large track changes are based on 2 ship reports on 17 August. Is the evidence clear-cut that the reported winds and pressures are actually due to the tropical cyclone and not to the baroclinic system over the U. S. east coast? Perhaps some hand-analyzed pressure plots would help?

**[Additional analyses were conducted every 6-12 hours from the 17<sup>th</sup> through the 19<sup>th</sup>. These do suggest – especially the 18Z 17<sup>th</sup> and 00Z 18<sup>th</sup> analyses – that the large northeast adjustments in track were not justifiable given all of the available data.]**

2. The committee concurs with the other proposed changes pending the resolution of the issue of the location on 17 August.

**[The microfilm map has been used to make minor adjustments in the track from late on the 13<sup>th</sup> through early on the 17<sup>th</sup>.]**

3. In the metadata summary, there are references to ship reports on the “7<sup>th</sup>” which should be the “17<sup>th</sup>”.

**[Done.]**

1943 Storm #3:

1. In the metadata summary, the phrase “helped maintain genesis on the 19<sup>th</sup>” is awkward. Please re-phrase this.

**[Done.]**

2. On the 20 August Historical Weather Maps (HWM), the plotted observations for the Lesser Antilles suggest a position west of the current track – something closer to 60-61W longitude. Can the track be adjusted to better account for these data?

**[Agreed, the track is adjust significantly westward on the 20<sup>th</sup>.]**

3. The committee concurs with the proposed earlier extratropical transition. It should be noted that while the HWM shows a large temperature gradient across the system, there are no inner core data to show the structural details.

**[Done.]**

1943 Storm #4:

1. Are the proposed track changes on 4-5 September consistent with the winds at Bermuda, especially the apparent lack of backing of the winds after the proposed closest approach? It should be noted that the proposed track for 3-6 September could use some smoothing given the lack of inner core obs.

**[The winds at Bermuda are NE on the 3<sup>rd</sup> and 4<sup>th</sup>, N on the 5<sup>th</sup>, W on the 6<sup>th</sup>, and SW on the 7<sup>th</sup>. The pressure was a minimum of 1006 mb (09Z) on the 3<sup>rd</sup> with 1011 mb on the 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup>. The cyclone then was clearly closest to Bermuda on the 3<sup>rd</sup> and likely about the same distance on the 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> as it slowly moved toward the northwest. The track has been revised to be somewhat closer to Bermuda on the 3<sup>rd</sup> but a bit farther southwest on the 4<sup>th</sup> and 5<sup>th</sup> to be in better**

**agreement with the Bermuda winds. The track has been smoothed and the small loop has been removed.]**

2. Is it possible that the position at 1200 UTC 7 September could be adjusted northwestward?

**[Agreed to move the position northwestward on the 7<sup>th</sup> from what was first proposed.]**

3. The HWM for 8 September show an east wind south of the proposed 1200 UTC position. Is the position based on the premise this ob is incorrect? Please clarify this.

**[Yes, the E 35 kt (40 mph) observation in HWM appears to have been incorrectly plotted in position, as it is otherwise identical to an E 35 kt farther north at 38.5N.]**

4. The proposed reduction in intensity on 8 September requires more justification since the 55 kt observation used to do this is over 100 miles from the center. Please provide this or use the original intensity.

**[It is agreed that this ship is too far from the center to justify making a downward change in intensity. The original intensity on the 7<sup>th</sup> through the 9<sup>th</sup> is restored. Therefore there were no intensity alterations made to this hurricane at any point.]**

5. In the metadata summary, please correct the description of the Bermuda pressures that have a constant 1011 mb pressure later falling to 1011 mb.

**[Corrected.]**

1943 Storm #5:

1. In the metadata summary, it states “Despite frontal boundaries being depicted on every day of its existence in HWM, it is likely that the system was a tropical cyclone on the 13<sup>th</sup> through early on the 15<sup>th</sup>”. Please provide the basis for this statement – for example, detailed plots of the temperatures near the center. It should be noted in the metadata summary that a cool air mass was in place over the eastern U. S. and the western Atlantic during this storm and it is uncertain as to whether it was fully tropical.

**[Unfortunately, the extremely sparse nature of ship observations precludes providing detailed plots of the temperature near the center. One ship at 01Z on the 14<sup>th</sup> that was about 150 nm NNE of the cyclone’s center reported 80F SST, but (naturally) was missing the air temperature. Another ship at 12Z on the 14<sup>th</sup> about 250 nm NNW of the cyclone did report air temperature of 76F, which would be consistent with the system being tropical but is by no means certain. Thus the statement in the metadata summary is toned back to indicate that it is not guaranteed at all that the system was fully tropical in character.]**

2. In the second to last sentence of the metadata summary “13<sup>th</sup>” should read “15<sup>th</sup>”.

**[Done.]**

1943 Storm #6:

1. What is the basis for the reduction in the peak intensity from 85 to 75 kt? It seems rather arbitrary given the lack of inner core data.

**[Agreed that there is no justification to changing the peak intensity, given the lack of inner core data. The original peak of 85 kt is retained.]**

2. What is the basis for adding an additional 6-hour period on 20 September? If the intensity was 20 kt at the time, should this count as a remnant low instead of as a tropical cyclone?

**[This is based upon observations of the curvature and speed of the winds in Louisiana and eastern Texas at 12Z on the 20<sup>th</sup> suggesting that a weak closed low still existed offshore. The intensity is assessed to be at 25 kt.]**

3. It is noted that the Louisiana Climate Data excerpt mentions that the disturbance reached the Louisiana coast on 19 September, albeit as a very weak system. Can OMR data from Louisiana be obtained to better determine the where and when the system dissipated? It is noted that the HWM for 21 September shows no trace of the cyclone.

**[The OMR were obtained for Lake Charles and Baton Rouge, LA as well as for Port Arthur, TX, as these were the closest stations to where the system is supposed to have made landfall. The data are ambiguous as to whether a very weak system made landfall on the 19<sup>th</sup>. The data are somewhat more clear that the system was offshore – again very weak – on the 20<sup>th</sup>. Thus the revisions suggested in the first draft are retained, keeping the cyclone just offshore until dissipation.]**

4. In the last paragraph of the metadata summary, please change “the storm was still remained located” to either “the storm was still located” or “the storm remained”.

**[Done.]**

1943 Storm #7:

1. The committee is split on whether to keep this storm in HURDAT due to the possibility it maintained frontal characteristics during its lifetime. Please obtain the OMR records from the landfall area so the frontal structure – if any – near the center can be determined. Also, please create detailed temperature plots of the ship data near the cyclone.

**[The Original Monthly Records were obtained and twelve hourly analyses were conducted from 12Z on the 29<sup>th</sup> through 12Z on the 1<sup>st</sup>. Additionally, NHC microfilm maps were obtained from 12Z on the 27<sup>th</sup> through 00Z on the 1<sup>st</sup>. This system was associated with a non-negligible temperature gradient across the system on the synoptic scale as well as rather substantial pre-existing cold air advection along the U.S. Atlantic seaboard. On the other hand, the cyclone came ashore with a sizable inner core increase in dewpoint and the inner core temperature gradient was small. It is possible that the cyclone never obtained true tropical cyclone (or even subtropical cyclone) characteristics. Given the ambiguity involved in this hybrid type system and the observational capabilities available at the time, the cyclone should remain as a tropical storm in HURDAT.]**

2. The committee otherwise concurs with the proposed changes.

**[Agreed.]**

1943 Storm #8:

1. Is there any data other than that on the HWM (COADS, etc.) that supports the proposed earlier genesis time? The HWM for 29 September suggests something was present east of the islands, but by itself is less than conclusive.

**[All of the data that were available was previously provided. It is thus agree to not alter the genesis time as originally shown.]**

2. What is the basis for the reduced peak intensity? If there is no core data to support this proposed change, please use the original HURDAT values.

**[There was no inner core data available on the 1<sup>st</sup>. It is thus agree to use the original HURDAT intensity value – 60 kt – on this date.]**

3. Please provide more details on the proposed earlier time of extratropical transition. It is noted that the HWM for 3 October shows the cyclone east of the frontal boundary, which argues against an earlier transition.

**[The 12Z October 3rd analysis indicates that the cyclone had become embedded within a frontal boundary and was extratropical before making landfall in Canada. (While the HWM map for the 3rd suggests that the cyclone was still in the warm sector south of the frontal boundary, the reanalyzed position is northwest of the HWM cyclone position placing the center essentially along the front.) The time for extratropical transition is now estimated to be around 06Z on the 3rd, 12 hours earlier than what was described in HURDAT.]**

1943 Storm #9:

1. Please re-examine the proposed track on 14-15 October. The proposed forward speed of 30 kt from 0000 to 0600 UTC 15 October does not look very reasonable, and the 1200 UTC 15 October position does not seem to fit the data.

**[The 12Z October 15<sup>th</sup> revised position was a typo, which led to wrong interpolated positions for the other synoptic times. This has now been corrected, leading toward minor adjustments in the track on the 15<sup>th</sup>.]**

2. Please provide a better justification of the proposed reductions in intensity, especially in light of the lack of core data. The metadata summary states “While data are sparse, such an intensification on the 15<sup>th</sup> and the 16<sup>th</sup> while quickly accelerating to the north is not likely”, which is not satisfactory.

**[Agreed that the evidence is too sparse for making any changes to HURDAT on the dates that the cyclone is away from land. Observations on the 11<sup>th</sup> and 15<sup>th</sup> are consistent with HURDAT’s original intensities. Thus the intensities are not changed from that originally shown in HURDAT.]**

3. On a related note, what data can be found from western Puerto Rico for this system? Could the San Juan OMR have any additional information?

**[The OMR are not available for Puerto Rico. The Climatological Data for the West Indies were obtained for October 1943, which did contain somewhat more information to document this hurricane.]**

4. Please provide a better explanation of the revised time of dissipation. The HWM still shows the system in existence east of the frontal system near 41N 67W at 1200 UTC that day, and the southerly winds at Nantucket (70W) do not automatically rule out the possibility of a cyclone near 67-68W.

**[It is now noted that the HWM analysis at this time indicated the cyclone was east of Massachusetts (and a frontal boundary). However, the 25 kt south wind at Nantucket on the 17th at 12 UTC strongly suggests that the cyclone likely no longer had a closed circulation any longer, if it indeed was only about 150 nm to the east. Thus dissipation is shown after 06 UTC on the 17th, with no extratropical transition, as the system likely remained in the warm sector of a large extratropical cyclone until dissipation.]**

1943 Storm #10:

1. The committee notes that the proposed new track is not properly plotted on the track map.

**[This is now corrected.]**

2. Please re-examine the proposed track near 1200 UTC 23 October. The north wind 20 mph and 1004.9 pressure at Corozal/Chetumal suggests the center is farther to the northeast.

**[Agreed. The position is adjusted northeast of what was previously proposed.]**

3. Is the proposed position for 1200 UTC 25 October perhaps too far to the northeast?

**[Agreed. The position is adjusted south of what was previously proposed.]**

4. The proposed extratropical transition is rather unclimatological. How certain is it that the low on the 26 October HWM is actually the former tropical cyclone?

**[While the extratropical transition is rather unclimatological in latitude, the available data is supportive that the low observed on the October 26<sup>th</sup> HWM along the frontal boundary is indeed the former tropical cyclone.]**

5. In the last paragraph of the metadata summary, “Swam Island” should be “Swan Island”.

**[Done.]**

1943 Additional Notes:

1. Proposed additional system #2: While there is no low analyzed on the 24 June HWM, there is a ship report of NW 25 mph and 1014.6 mb near 29N 79W, suggesting that the system is still present and possibly has a small inner wind core. Is there any information on this system in the Florida or Georgia Climatological Data publications? This system should be re-examined if additional World War II data comes to light. It should be noted that while the central pressure of this system is rather high, so are the surrounding environmental pressures, especially to the east of the system.

**[Agreed that the ship on the 24<sup>th</sup> indicates that the cyclone is still present then, as it drifted slowly northward. The Florida Climatological Data reported that Jacksonville had its lowest pressure for the month (1013 mb on the 27th) and peak 5 min winds (18 kt S on the 28th), but described no impacts nor other note of the system. The Georgia Climatological Data reported that Savannah had its lowest pressure for the month (1011 mb on the 27th) and peak 5 min wind (27 kt E on the 27th), but again described no impacts nor other note of the system. Thus with no indication of tropical storm intensity, the system is not added into HURDAT.]**

2. The committee concurs with leaving the other systems out of HURDAT.

**[Agreed.]**