Best Track Committee Re-Analysis Comments for 1936

**Replies to the comments in boldface – Andrew Hagen/Chris Landsea – August 2012**

General comments:

1. The majority of the storms need binder maps for the pre-genesis and post-dissipation times. This is a particular problem for storm #12 (originally #11), where 24-27 August data is discussed while the maps are missing from the binder. Please provide these, as well as making sure they are provided for all the subsequent years. This will make it easier for the committee to examine the systems’ genesis and dissipation.

**Done. All systems now have the maps for the days before genesis and after dissipation.**

2. There are many places in the metadata where quotations from the Monthly Weather Review (MWR) and other sources are not inside quotation marks. Please correct this.

**Done.**

3. Storm #4 (formerly storm #3) is plotted in the wrong place on the map, showing a landfall in Belize instead of Texas. Please correct this.

**Done.**

4. There are metadata sections where there are long handwaving arguments about landfall intensities, impacts, and the like. This is most notable for storm #2 (formerly storm #1), storm #14 (formerly storm #13), and storm #16 (formerly #15). Please re-write these to be more concise.

**Done.**

1936 Storm #1 (new):

1. The committee does not concur with adding this system to HURDAT due to this being in a very unclimatological location for June tropical cyclones and to the lack of convincing evidence for tropical cyclone characteristics. If the evidence exists, please make a better case about this system having a wind structure more resembling a tropical cyclone.

**Agreed to not add the system to HURDAT. Instead it is moved to the Additional Notes section.**

2. Can any evidence be found that convective processes sustained or strengthened this system? The proposed intensity – a slow and steady decline – makes it appear this was just a decaying low after the frontal structure dissipated.

**No, no evidence can be found that convective processes sustained or strengthened this system. It is, after all, 1936 and the observational techniques remain simply ship and land station measurements.**

1936 Storm #2 (originally #1):

1. Please include a daily write-up for 8 June.

**Now Storm #1 - Done.**

2. On the binder map for 9 June, there is a penciled-in observation of 50 kt in the Pacific with a time of approximately 2100 UTC. What is this and should it be included in the 9 June discussion?

**This was from the MWR table of oceanic gales and has now been added into the daily summary.**

3. The committee has issues with the proposed Pacific addition to the track and does not concur with it at this time. One issue is that Pacific cyclones do not always successfully cross Central America, and there is insufficient Central American data on the 10-11 June maps to show the crossing. Please make an effort to find additional Central American data for this case.

**Additional observations for Central America were obtained from the on-line NOAA Central Library Foreign Climate Data. Specifically, the Mexican surface observations, surface analyses, and daily summary were obtained and are consistent with the cyclone moving across Central America. Note that the system crossing Central America from the northeastern Pacific to the northwestern Caribbean Sea is also consistent with the Monthly Weather Review interpretation of the event as well.**

3a. If the Pacific addition to the track is eventually included, there may need to be more weakening over Central America than currently indicated. Also, is the data coverage good enough to justify the weakening indicated while the cyclone was over the Pacific on 9 June?

**The data coverage is sparse on the 9th and thus the cyclone is maintained as a hurricane until landfall in Guatemala. More weakening is now indicated going from a 70 kt hurricane down to a 30 kt tropical depression while crossing Central America.**

3b. The committee notes that Historical Weather Maps show a circulation over the southeastern Caribbean on 9 June and a vorticity maximum near Swan Island on 10 June. Could this be the source of the Atlantic storm rather than the hurricane in the Pacific? Please investigate this.

**It has now been noted in the summary writeup that a weak low/wave moving northwestward across the Caribbean Sea on the 9th and 10th may have been either merged with the existing tropical cyclone or - alternatively – may have been the source of the tropical cyclone in the northwestern Caribbean on the 11th.**

4. The committee notes that even if the Pacific origin of this system is adopted, it should not count as an Atlantic hurricane – e. g. on the table for the track map.

**Agreed.**

5. The metadata for this system is not well written. For example, in the metadata summary there are pressures of 998 mb in the Gulf of Mexico on 14 June and 999 mb at Ft. Myers on 15 June – neither of which are mentioned in their respective daily sections. In addition, there are several daily summaries that do not include a ship highlights section. Please re-write these parts of the metadata.

**These observations were from the USWB Advisories, which has now been clarified.**

6. The committee concurs with the proposed intensities over Florida.

**Okay.**

7. On a related note, however, the committee is concerned about the gaps in the available data in Florida. For example, without the Miami OMR it is impossible to tell why the Miami observation went calm four hours before the center fix, or what the Miami pressure was at the time of the center fix. (The summary says the pressure was 1002 mb from 1030 UTC to around 1323 UTC but does not give a source of this data.) The metadata summary also mentions that the Ft. Myers pressure and Naples winds may not have been the peak values, which suggests the records for these stations are also incomplete. Please obtain the complete records for these stations and make the necessary corrections to the track and the metadata.

**The statement of Miami’s observation going calm four hours before the center fix was a typographical error. OMR from Miami is now included in the binder. The source of the observations is now given (OMR and MWR). The observations from Fort Myers and Naples were obtained from the USWB Advisories on the tropical storm, which is now so indicated. No other source has this information. These are also now included in the binder.**

8. Is it possible that the intensity over the Atlantic is too high, since there are apparently no ship reports higher than 35 kt? The committee notes that this was a monsoonish cyclone where the normal TC wind-pressure relationships don’t work as well, and in addition it was possibly undergoing extratropical transition over the Atlantic.

**Agreed, the intensity over the Atlantic is reduced down from the 45 kt proposed to 40 kt.**

9. On a related note, there is mention of a derived central pressure of 996 mb at 1200 UTC 16 June. However, there is no mention of the data that it came from in either the daily metadata or the metadata summary. Please correct this.

**A ship from HWM with 15 kt SSW wind and 998 mb pressure was the reason for the 996 mb central pressure analysis. This is now added to both the daily writeup and metadata summary.**

1936 Storm #3 (originally #2):

1. Please add a daily write-up for 22 June.

**Now Storm #2 - Done.**

2. Please include a detailed explanation of revised genesis time and location on 18 June. The Historical Weather Map for 1200 UTC 18 June does not show a circulation, although the binder map has a penciled-in west-northwest wind near Progresso, Mexico.

**After obtaining the newly available Mexican synoptic maps, at 12Z on the 18th the system was a broad low centered over Yucatan. Thus the timing of genesis at 06Z on the 19th is now unchanged from that shown originally in HURDAT. The WNW wind (actually NW 15 kt) was a COADS observation from 19Z. However, there were not sufficient additional observations around that synoptic time to know whether the system had moved offshore and become a tropical cyclone by that time.**

3. The metadata summary should include a note that the intensity during the latter portion of the storm’s life is uncertain due to the lack of nearby data.

**Agreed.**

1936 Storm #4 (originally #3):

1. Are there any ship reports that would show a circulation or vorticity center prior to 1800 UTC 26 June? It is noted that while the binder map analyzes a trough near 96W, a ship near 26N 94W has northeast winds of 20 mph. Is it possible that something was present farther east?

**Now Storm #3 – It is possible that there was something present farther east. However, there were no ships south of 26N west of 89W. Thus there is not evidence to conclude that the cyclone had formed by 12Z on the 26th. No change is made to the genesis time originally shown in HURDAT of 18Z on the 26th.**

2. Can you add comments on the origin of the system to the metadata summary?

**Done.**

3. In the metadata summary, it states “Since the ships…”. Should this be “Since the ship…”?

**Done.**

1936 Storm #5 (originally #4):

1. Is it possible the system was present earlier than currently analyzed? The Historical Weather Maps show a low near 20N 80W on 25 July, and while this may not be correct the data from western Cuba suggests the possibility of a 1012 mb low near 22N 82W. This low is partly addressed in the metadata summary, but that discussion does not include why the system was started on 26 July instead of 25 July.

**Now Storm #4 - The COADS was obtained but there is not enough evidence to close off a circulation at any point prior to the genesis point as originally shown in HURDAT at 06Z on the 26th.**

2. Could the 30 kt intensity for 1200 UTC 26 July be lowered? The committee notes there are no ship reports on the binder map above 20 kt at that time.

**Agreed to lower the intensity by 5 kt on the 26th.**

3. A typo in the 26 July metadata: “29.32 inches” should be “29.82 inches”.

**Corrected.**

4. Is the 28 July daily metadata complete?

**It has now been completed.**

5. What was the basis for making the intensity at 0000 UTC 27 July 40 kt. Was it the premise that the 35 kt report just before that time may not have sampled the maximum winds?

**This has been brought down to 35 kt to be consistent with the lowered but gradually increasing winds on the 26th.**

6. The wind report from Delta Farms, Louisiana is “estimated”. Based on that, is it possible that the original 40 kt landfall intensity should be kept? Is there nearby data (e. g. Port Eads, Louisiana) that could support the proposed intensity?

**Agreed to keep the original 40 kt at landfall. Port Eads had winds less than 23 kt, as 23 kt was the maximum (5 min) wind recorded at that station – on the 18th - for the month of July. This would also support not increasing the 40 kt intensity at landfall.**

1936 Storm #6 (originally #5):

1. It should be mentioned in the metadata summary that the Historical Weather Map for 26 July suggests a tropical wave or trough along 75W in the Bahamas, although the pressures are high and the winds are light.

**Now Storm #5: This is now added into the final paragraph discussions.**

2. There is a discrepancy on the winds in Miami Weather Bureau Office in the metadata, with the 29 July daily section stating 46 kt and the summary stating 41 kt. Please correct this.

**The 46 kt value in the 29 July daily section is a 1-min elevated value. The 41 kt is what you get after reducing that value to 10m.**

3. Can any data be found from Homestead, Florida, or any newspaper accounts of the storm impacts in that area?

**As shown in the Florida Climatological Data, Homestead was a cooperative observer site that did not measure winds or pressures. A report on the cyclone did state that there was very little damage in south Florida. This report also provided a 994 mb (possible central pressure) observed at 0030Z on the 29th at Carysfort Reef Lighthouse. Obtaining newspaper accounts for individual tropical storms and hurricanes is beyond the resources available for this project.**

4. Can a source be found for the 964 mb “corrected” pressure reading for Ft. Walton Beach mentioned in Connor? It is curious that the MWR does not mention this observation.

**The original source for the 964 mb pressure reading for Ft. Walton Beach (then Camp Walton) is the July 1936 Florida Climatological Data. This is now added into the writeup.**

5. Please include the possible intensity for 964 mb using the intensifying subset of the Brown et al wind-pressure relationships in the metadata summary. While there is no evidence the system was still intensifying at landfall, there is also no evidence it was not. Would the value for the intensifying relationship support a landfall intensity of 95 kt?

**Yes it would. 964 mb equals 95 kt according to the intensifying subset of the north of 25N pressure-wind relationship, and 91 kt if it was not intensifying. The system certainly intensified at some point while it was in the Gulf of Mexico, though there is no definitive evidence that it was still intensifying at landfall. Although the RMW from Ho et al. (~20 nmi) is slightly smaller than the 23 nmi climatological value for this latitude and central pressure, the forward speed of the cyclone was a slow 7 kt. A 90 kt intensity is chosen for landfall and for 12Z on the 31st (up from 80 kt originally).**

6. Do Ho et al. give a source for their 19 n mi radius of maximum wind (RMW)?

**Ho et al. indicated that the RMW of 19 nm was both “computed from pressure profile” and “observed from wind speed record” at Valparaiso.**

7. Is the 7 kt forward motion at landfall given in the metadata summary significant for the intensity because it is slower than climatology? If so, please state that explicitly.

**Yes, so explained.**

8. Is it known why this system was originally classified as a category 3 hurricane at landfall in Florida?

**Jarrell et al. (based upon Hebert and Taylor) called this a Category 3 based on a 964 mb landfall central pressure, which was the main criterion utilized in determining category before the advent of reliable aircraft reconnaissance winds measured in hurricanes beginning in 1990.**

1936 Storm #7 (originally #6):

1. The committee is of the opinion that this system was not a tropical storm. However, the data coverage does not seem sufficient to justify its removal. Please include a sentence in the metadata summary about the possibility that this system never was a tropical storm.

**Now Storm #6 - Agreed.**

2. The binder map for 4 August is centered over the wrong area. Please replace it.

**Done.**

3. While there are no gales or low pressures on 4 August, it should be noted in the daily metadata that St. Martin had a northwest winds and a lower pressure than the other nearby islands. This data supports some kind of low near the Leeward Islands on that day.

**The daily metadata summary is describing the analysis provided within the HWM, which indicated no features of interest on this date. It is now included in the summary paragraphs, however, that a closed circulation was present from the HWM and COADS observations at 12Z on the 4th.**

4. What was the basis for changing the time of extratropical transition on 10 August? This change introduces a possible second tropical storm phase that did not exist before, and it needs a better discussion in the metadata summary. Is the data sufficient to determine if transition occurred sometime on 9 August?

**Upon further review, the system was still a tropical cyclone at 12Z on the 9th (though its circulation was becoming a bit elongated), but clearly had become an extratropical system by 12Z on the 10th. There are not sufficient observations at the 00Z and 06Z synoptic times to conduct a surface analysis. Therefore, the extratropical transition at 00Z on the 10th is retained.**

4a. On a related note, is the data coverage sufficient to justify the proposed weakening on 8 August and the proposed re-intensification on 10 August?

**The data coverage is not sufficient to justify a 5 kt weakening (down to tropical depression stage) on the 8th and 9th. The original HURDAT is now retained.**

5. Has Bermuda been contacted for possible data on this system?

**The Bermuda Weather Service was contacted, but they have no tropical storm force winds or low pressures observed in association with this system. Peak winds were S 24 kt at 19Z on the 8th and lowest pressure was 1013 mb at 19Z on the 9th.**

1936 Storm #8 (originally #7):

1. The committee is split on whether this system was actually a tropical storm. There is no conclusive evidence that says it was. However, as mentioned in the metadata summary the data is very sparse during a significant portion of the life cycle. Based on this, it is decided that the system will remain in HURDAT. A note to this effect should be added to the metadata summary.

**Now Storm #7 – Agreed.**

2. Does the data at 1200 UTC 7 August support a closed circulation? The data analyzed on the binder map suggests a sharp trough instead. The 1009 mb pressure at 0000 UTC 8 August suggests genesis has occurred by then, but perhaps the time could be moved back to 1800 UTC 7 August.

**Agreed to move genesis time back to 18Z on August 7th.**

3. If more detailed obs from Tampico can be found at some time in the future, this system (and several others) could be re-examined.

**The Mexican synoptic maps and daily commentary have been obtained. No tropical storm force winds or low pressures were observed in Tampico, as the weak tropical storm made landfall quite a bit north of the station.**

1936 Storm #9 (originally #8):

1. The committee concurs with keeping this system as a hurricane, and concurs with the proposed decrease in the peak intensity. The note about the lack of evidence of this ever being a hurricane in the metadata summary should be strengthened.

**Now Storm #8 – Done.**

2. Is it possible that the center passed far enough north of Tampico that it could have been a hurricane at landfall even with the observed winds and pressures in Tampico? There is a concern that there is insufficient data to justify the downgrade to a tropical storm at landfall. (See point 3 for storm #8 above).

**Additional observations were obtained from the Mexican synoptic maps and daily discussion. The lack of observed or reported tropical storm force winds at Tampico indicate that the center either passed farther north of Tampico, or that the intensity was weaker. The track of the cyclone is shifted a couple tenths north and the intensity is maintained as a 65 kt hurricane at landfall.**

3. The committee concurs with the other proposed changes.

**Okay.**

1936 Storm #10 (originally #9):

1. Can a comment be added to the metadata summary on the origin of this system?

**Now, Storm #9 – Done.**

2. The binder map for 1200 UTC 20 August shows a low pressure area near the northwestern Bahamas and southeastern Florida. However, the strongest winds are only about 20 kt, which sheds doubts on whether the system was a depression at that time. On the other hand, the Historical Weather Maps for 19 August suggest a circulation was present east of the northwestern Bahamas on that day. Please review the genesis time taking these factors into account.

**It is possible that the system had attained a closed low (and thus became a tropical depression) on the 19th, but the observations are inconclusive. Thus genesis at 06Z on the 20th is retained as a 25 kt tropical depression.**

3. Are OMRs available for Titusville and Daytona Beach for this system? The committee is currently split between 55 and 50 kt for the landfall intensity, and it would like to able to get the best possible data for the landfall position and RMW.

**Titusville and Daytona Beach were cooperative observer stations in 1936, not U.S. Weather Bureau. Some additional descriptive information was obtained from the Florida Climatological Data publication, but no additional observations. It is likely that the 40 to 55 miles per hour winds reported in Titusville were visually estimated, not anemometer recorded.**

4. Are there any local accounts of this system available that would help refine the landfall point and intensity?

**Some additional descriptions of the impact (or lack thereof) were obtained from the Florida Climatological Data report. Thus the landfall intensity is revised downward slightly to 50 kt (but above the 45 kt from that shown in HURDAT).**

1936 Storm #11 (originally #10):

1. The Historical Weather Maps for 27 August suggests the possibility of a circulation near the east coast of the Yucatan Peninsula as early as 1200 UTC 27 August. Is it possible there was an earlier genesis for this system?

**Now, Storm #11 – COADS and observations from the Mexican synoptic maps were obtained for the 27th. These suggest that the system was a trough in the Northwestern Caribbean Sea on this date. Thus genesis beginning at 00Z on the 28th as proposed is retained.**

2. Since there is only one observation near the center, the peak intensity is problematic and the system should most likely remain a hurricane. However, given that the maximum reported winds were 60 kt and the minimum reported pressure 1000 mb, perhaps a peak intensity of 65 kt would be more appropriate?

**Do not agree. The amount of inner core data is insufficient to make a 5 kt change downward from 70 kt to 65 kt for peak and landfall intensity. We just do not have enough observations to be this precise.**

3. The reports from the ship Cayo Mambi are a little hard to reconcile with the proposed track. The MWR gale table states that the initial gale was from the southwest, which shifted to southeast at the time of minimum pressure, and then to the east. This ship was at 21.7N, and the proposed track is at 21N. Please re-examine this to see if the storm came more northward, then acquired a southward component of motion before landfall at Tuxpan.

**Agreed to adjust the track back to the north to better reconcile with the ship observations and at the same time to reflect a landfall south of Tuxpan. It is also important to recognize that: a) there are no positions available for the ship aside from the time of lowest barometer, b) the ship locations were likely only known to the nearest 0.5 degree latitude/longitude in this era.**

1936 Storm #12 (originally #11):

1. Please clarify why 1800 UTC 25 August was chosen for the genesis time.

**Now, Storm #11 – Observations – primarily from Ship #07043388 – indicate that the system had become a tropical storm by no later than 12Z on the 26th. However, on the 25th, the observations at 12Z are ambiguous as to whether a closed low had yet formed. Thus an 18Z on the 25th genesis time is estimated.**

2. The committee is split over whether to make this a major hurricane sometime on 3-5 September. The 959 mb pressure reported on 5 September (and the associated central pressure that must have been lower) suggests the possibility. However, there is no evidence to directly support this. Please add a sentence to the metadata summary reflecting the possibility that it was a major hurricane.

**Agreed.**

3. The passage in the metadata summary regarding the intensities on 5 September need to be clearer.

**Agreed.**

4. The current proposed track has the system remaining a tropical cyclone until north of 46N in the northeastern Atlantic. While certainly possible, this is unclimatological. Please review the data to see if extratropical transition occurred earlier.

**While having the system still tropical at 45N (at 12Z on the 5th) is somewhat unclimatological, inspection of the available observations indicate no E-W temperature gradient over the inner core of the hurricane while retaining a symmetric vortex. Thus, no changes are made to the timing of extratropical transition (00Z on the 6th).**

1936 Storm #13 (originally #12):

1. The committee is of the opinion that this system was not a tropical storm. However, the data coverage does not seem sufficient to justify its removal. Please include a sentence in the metadata summary about the possibility that this system never was a tropical storm.

**Now, Storm #12 – Done.**

2. The binder maps for 6 and 8 September – the latter while this system was going on – are missing. Please provide them.

**Done.**

1936 Storm #14 (originally #13):

1. While it is likely that the original HURDAT intensities for 11-14 September are too high, it is noted that none of the observation on these days seems to be close to the center of the cyclone. For example, the ship with 993 mb and 30 kt at 2000 UTC 13 September is more than 60 n mi from the estimated position, even after eastward track adjustments. A 993 mb pressure that far from the center usually means a large and intense cyclone which would support the original higher intensities. (Assuming that the revised track is correct and the ship is not inside the RMW.) On the other hand, a ship that was closer to the center at 1200 UTC that day (at the same latitude/longitude) reported 1006 mb, which supports lower intensities. Please re-check the data to see if either of the pressure reports were in error, the ship position reports were in error, or if the track and intensity near this time need revising.

**The ship that recorded 993 mb at 20Z is ship 7041994. Its positions are only precise to 1 degree. Therefore, although the reported position of the ship at the time of the 993 mb measurement was 22.5N, 59.5W, the ship could have been as far west as 59.9W. Based on the reported positions throughout the day, the best estimate of the actual position of the ship at the time is 22.8N, 59.8W. The analyzed interpolated HURDAT position at 20Z on 23.3N, 60.8W – still 0.5N and 1.0W from the ship. However, the ship was without a doubt much closer to the analyzed center 4 hours earlier – at 16Z, when it reported 25 knots. The wind speeds reported by this ship do not seem consistent with the pressures. It is very likely that either the winds are too low or the pressure is too low. However, the ship was on the south (likely weaker side of the storm). The other ship that recorded 1006 mb with 50 kt at 12Z is ship BX002493. This ship was reporting latitudes to the nearest 0.1 degree precisions. The analyzed position at the time of the 50 kt with 1006 mb is 1.0W and 0.6S of the ship. Observations from both ships seem to suggest that the cyclone had a large RMW and may not have had a strong inner-core typical of strong hurricanes. No further changes to HURDAT were introduced.**

2. The hurricane was apparently much larger than average, especially from 15 September onward. This suggests there may be some issues with the normal application of the various wind- pressure relationships, and that the intensities during that period might be on the low end of that allowed by the relationships (if not lower).

**Agreed to reduce the intensity down some, when based upon the pressure-wind relationships adjusted by the large size.**

3. The assessment of the winds on the North Carolina coast is problematic, especially when the proposed peak intensities are accounted for. The metadata discussion states that 85 kt winds likely affected the coast when the RMW hit it, while at that time the maximum winds were 90 kt. Since the coast was on what should have been the weaker side of the hurricane, these two numbers appear inconsistent. Please re-examine this to see if the intensity needs to be revised upward or the coastal winds need to be revised downward.

**Agreed to make the intensity and impact along the coast more consistent. The intensity at time of closest approach is now down to 85 kt and the peak wind along the coast is assessed to be 75 kt. This makes the hurricane a Category 1 impact for the United States.**

4. Is there any information from Ho et al. on how the RMW was derived? Given the greater than normal use of the RMW for evaluating this storm, additional information on it is desirable.

**Chris/Sandy: Ho et al’s 34 nm estimate of the hurricane at closest point approach was “computed from pressure profile”. No other details were provided. A value of about 35 nm (ranging from 30 to 40 nm) appears to be reasonable, given the sparse data available and that the cyclone did not make landfall.**

5. The section in the metadata summary about the winds at Cape Henry, Virginia, is too ambiguous. What is the source of the possible 73 kt wind and which data are reliable?

**As was quoted in the MWR: “At Cape Henry the full force of the hurricane winds was not recorded; the anemometer cups and spindle were carried away by the wind at 11:37am (eastern standard time) of the 18th; one cup had previously been blown away. The wind was estimated at 75 miles an hour”. Thus because the anemometer failed, there was no reliable observations of what the peak winds were at that location.**

6. Could a zoomed-out version of the 19-20 September maps be included in the binder? The cyclone is overflowing the maps shown there. ☺

**Done.**

7. The intensities for 0000-1200 UTC 19 September may be too high since this was a very large cyclone completing extratropical transition. Please re-examine these.

**Agreed, the intensity at 00-12Z on the 19th are lowered 5 kt below the original HURDAT to 80, 75, and 75 kt, respectively.**

1936 Storm #15 (originally #14):

1. Although the genesis time is moved up to 9 September, there is no daily write-up for that day and no binder map. Please provide these, along with a stronger explanation of why the genesis was moved up.

**Storm #14 - Done.**

2. The committee concurs with increasing the peak intensity. However, it is split between a 45 and a 50 kt peak intensity. On one side, the 25 kt west winds at Brownsville combined with a 14 kt forward motion toward the northwest supports 50 kt. On the other hand, the strongest winds at Brazos Santiago Pass (on what should have been the stronger side of the storm) were below gale force, supporting a lower intensity. Can the Brownsville OMR, which may help in this decision, be acquired?

**While the Brownsville OMR is unavailable, the Texas Climatological Data and the Mexican synoptic maps were obtained. The former did confirm that Brownville’s minimum pressure was 1000 mb for this cyclone and that its peak winds only reached 24 kt. Because of the slow 11 kt forward speed and the somewhat low winds at Brazos Santiago Pass, a 45 kt landfall intensity (and peak intensity) has been assigned.**

3. Is there any idea about the origin of this system (tropical wave, Pacific system, etc.)?

**It is unclear as to the origins of this system, which is now so stated.**

1936 Storm #16 (originally #15):

1. In regards to the earlier genesis time, was the 25 kt ship report mentioned in the metadata summary for 18 September close enough to the system to consider it a tropical depression this day rather than a low pressure area?

**Storm #15 – No, the 25 kt observation was not used as justification that it was a tropical cyclone. It was simply used to help determine the intensity. The ob was 25 kt NE with 1014 mb on the 18th at 12Z at 19.7N, 61.7W, which was likely about 200 nmi WNW of the developing system at the time. The wind direction is consistent and we treated it as part of the circulation. The annotated surface map for 18 September is now provided.**

2. The committee notes that from 19-21 September the proposed intensities strengthen the system at a rate slower than climatological Dvorak 1 T-number a day, while the original HURDAT is closer to that value. Since there is a lack of data within 70-110 n mi of the center on these days, can the proposed changes be justified? There is more data near the center on 21 September. However, this system was described in the MWR as “small diameter” so there is no guarantee the ships sampled the inner core. Once again, can the proposed changes be justified?

**Agreed to retain the original HURDAT intensities on these dates.**

3. The MWR gale table states that the ship Saramacca reported force 12 winds at the time of the lowest barometer. It may be the MWR sometimes uses “center” to refer to the inner core area of a hurricane, not just the eye. Based on the gale table and the lack of any mention of calm during the encounter, this observation should be treated as peripheral. There is an issue with the reported pressure, though. The MWR text says it was 28.86 inches (977 mb), while the gale table says it was 28.94 inches (980 mb). Can this be straightened out?

**Agreed that it is likely MWR used “center” for both inner core of a hurricane, not just the eye. Not knowing which is correct pressure value is correct, we will go with the deeper observation.**

4. Some members of the committee would like to keep the 95 kt peak intensity, while other would like to see a lower intensity. Given the uncertainty in the observation calibrating the peak intensity, 90 kt looks like a good compromise.

**Agreed.**

1936 Storm #17 (originally #16):

1. The committee is in favor of keeping this system in HURDAT, although the evidence that it was a tropical storm is rather thin. A statement to this effect should be added to the metadata summary.

**Agreed.**

2. The committee would like to know why there is emphasis on 24-hours pressure falls in the metadata summary for this system? While important in determining whether a disturbance is present and whether it may be strengthening, by themselves pressure changes do not indicate that a tropical cyclone is present. Please provide a better justification for this emphasis.

**The wind directions and wind speeds do not provide very good evidence for or against this being a tropical cyclone since there are not very many observations. The 24-hour pressure falls are all we have to indicate there was a disturbance there. When deciding whether to remove the system from HURDAT, we try to determine whether there is enough evidence to remove the system from HURDAT. That was not the case with this cyclone. But we still want to discuss observations that suggest there was a disturbance there and it might have been a tropical storm.**

3. In regards to the ship report of 1014 mb and SW winds at 1200 UTC 10 October, the committee notes that the wind could be right while the pressure is wrong. Is there enough information in COADS to establish any reporting history for this ship?

**That ship only reported one time during October 9-11, so we cannot establish a history for this ship.**

1936 Storm #18 (new):

1. The committee does not concur with adding this system at this time. Examination of the proposed positions shows that the system is moving 9-10 degrees of longitude per day on 7-8 November, or at about 25 kt. This motion calls into question whether the system had a closed circulation on 8 November, when the Historical Weather Maps show no westerly winds near the system.

**Now, Suspect #11 – It is agreed that the evidence is too slim to indicate a new tropical (or subtropical storm). System is moved to the suspects section.**

2. The committee notes that there does seem to be evidence on a closed circulation (or low pressure area on 6-7 November and again on 9 November when the system has a slower forward speed.

3. If better evidence of a closed circulation can be found, the data should be examined to see if this was a subtropical instead of a tropical cyclone.

1936 Additional Notes:

1. System #2: This system synoptically somewhat resembles proposed storm #18, although it is not moving quite as fast. It may actually be more of a subtropical cyclone than a tropical cyclone. The committee concurs with leaving this system out of HURDAT at this time. However, an effort should be made to find Cuban observations on 22-23 May so it can be more completely analyzed.

**Cuba (Ramon Perez and Maritza Ballester) was contacted with regards to this suspect. No observations of tropical storm force winds (or low pressures) were observed in Cuba.**

2. System #4: The one report of south-southwest winds suggests the possibility that a small closed circulation existed. The committee concurs with leaving this system out of HURDAT at this time, but asks that a search be made for data from the Lesser Antilles to see what kind of system may have crossed them prior to 23 June.

**Now, System #5 - No additional observations were found indicating a tropical cyclone was present - http://docs.lib.noaa.gov/rescue/**

3. System #5: The committee concurs with leaving this system out of HURDAT. The metadata summary should also note this system is mentioned in Connor.

**Done.**

4. System #10: The committee asks that this system be written up as a possible subtropical or tropical cyclone. In addition to the Historical Weather Maps and COADS, there is a write-up of this system in the December 1936 MWR starting on page 410. The article and the MWR gale table also document the encounter of the ship Clara with the cyclone, which reported a minimum pressure of 996 mb and winds of force 9-10. This observation seems to be missing from COADS.

**Now, Storm #17 - This system is now added in as a new tropical storm. The MWR writeup and observation are now included.**

4a. In the metadata summary for system #10, there is a fragment “Observations confirmed the.” Please correct this.

**Corrected.**

5. The committee concurs with leaving the rest of the possible additional systems out of HURDAT.

**Agreed.**