Best Track Committee Re-Analysis Comments for 1945

General comments:

1. The binder entries for many of the 1945 storms are a bit of a mess. For example, the scanned weather maps for storm #1 were in no semblance of order, which made it difficult to tell if all the necessary maps are present. Please make sure all of the subsequent maps and other material in the binder are in the proper order. In addition, please make sure to have all ship logs properly posted in the Excel format.

Done.

2. If not already present for all cyclones and suspects, please create binder maps for at least a day before the proposed genesis and at least a day after the proposed dissipation. This will make it easier for the committee to evaluate the genesis and dissipation.

This is now done for all existing tropical cyclones and new tropical cyclones.

3. There is a tendency in the metadata to make broad statements or indicate changes made to the HURDAT with little supporting explanation in the metadata. The metadata sections should feature better discussions to detail what changes were made and why.

The metadata sections have been made more specific about what changes were made and why.

4. In the process of re-writing the metadata for 1945 and subsequent years, please add the color coding for significant changes to the HURDAT section.

Done.

5. Please note that the current track map appears to show the current HURDAT intensity values and not the proposed revisions. This is most noticeable for storms #1 and #9.

Corrected.

1945 Storm #1:

1. There is a glitch in the HURDAT section – one of the data lines for 22 June is missing.

This is because there were no changes to the track or intensity made on that day.

2. Please re-examine the position for 1200 UTC 20 June. The plotted observations suggest a position north of the proposed 18.5N.

Agreed. The position has been moved north to 19.0N at that time. The following latitudes are changed (second number) from that first proposed (first number):
6/20 12Z: 18.5N → 19.0N
6/20 18Z: 19.2N → 19.5N
6/21 00Z: 19.9N → 20.0N

3. The 1005 mb pressure at Cozumel, Mexico on 20 June does not appear to be a central pressure. Please comment on this and the implications for the proposed intensities.

When Cozumel recorded 1005 mb with 10 kt E at 18Z on the 20th, the analyzed position of the TC is 80 nm SE of Cozumel. At that time, Cozumel was just beginning to feel the influence of the outer circulation of the small, weak TC. Thus it is likely that the central pressure was at least a few millibars lower than 1005 mb, perhaps more. Text has been added to the metadata summary explaining the intensity of the 20th.

4. Please provide a more rigorous and concise argument about the aircraft winds and the peak intensity over the Gulf of Mexico.

Until the late afternoon of the 23rd, there was not any data to suggest that the cyclone was even at hurricane strength. The aircraft data late on the 23rd indicates that the cyclone was clearly a hurricane. It appears that the 100 kt winds were likely surface estimates as opposed to flight-level measurements. Hagen's 2010 thesis and Hagen et al. (2012) document a high bias in reported aircraft estimated surface wind speeds, especially for TCs that were actually category 1 and 2 hurricanes. The aircraft did not report any pressures less than 997 mb. At landfall, available observations indicate that although the cyclone was small, and although the center did not make landfall in a very populated area or near an observing station, the available data that was located a short distance outside of where the RMW made landfall strongly suggest that the TC was nowhere near major hurricane strength at landfall. This is important because landfall occurred just 12 hours after the aircraft estimated surface wind of 100 kts. The observer at Tampa did report 60+ mph winds at one point (microfilm message). It is likely that the cyclone was indeed a hurricane a landfall. Data, damage reports, etc. point to this being a Category 1 at landfall. Text has been added to the metadata summary.

As for the argument that a peak analyzed intensity of 85 kt may have been too high, we have seen many cases in the past 10-20 years of a TCs winds increasing rapidly followed by rapid weakening. The 30 kt increase shown in a 12 hr period is not unreasonable. Also, we must carry some weight and respect for the aircraft reported 100 kt winds. Those obs cannot be completely disregarded. Furthermore, this was a small TC and could have had an intense core during that time, although it was short-lived.

5. Does Jarrell et al discuss the source of the 985 mb Florida landfall pressure? There is no data presented here to back that up.

Jarrell et al.'s Tech Memo contained central pressures that were published earlier in Hebert and Taylor's (1975) Tech Memo, which nearly always repeated the same values that

were first reported in Connor (1956), an unpublished USWB New Orleans report on U.S. Gulf coast tropical storms and hurricanes. No further details are available.

6. The committee concurs with the proposed decreases in intensity during the time the storm was over Florida. In addition to the data, this is supported by the apparent lack of wind damage.

Thank you.

7. The committee also concurs with the upgrade to a hurricane as the system was passing Cape Hatteras. However, given the winds reported at Hatteras perhaps 65 kt would be better than 70 kt? Also, if it is available please provide the portion of the Hatteras Original Monthly Record (OMR) that has a text description of the storm.

Agreed to lower intensity from 70 kt to 65 kt at all times from 6/25 12Z – 6/26 18Z. The Hatteras OMR had zero text description of the storm, just the standard observations.

8. The committee concurs with the remainder of the proposed changes.

Thank you.

9. One typo in the metadata summary: "based upon a fairly numerous".

This has been corrected.

1945 Storm #2:

1. Is a microfilm map from near 0000 UTC 19 July available? If so, please include it in the binder.

Yes, the microfilm map from 0000 UTC 19 July is now included in the binder.

2. Please re-examine the position and existence of the system near 1200 and 1800 UTC 19 July. The microfilm map for 1200 UTC shows observations of south and southwest winds between 26-28N and 94-95W which do not support the proposed 91W position. The 1800 UTC observations are in better agreement with the proposed 91.5W position, but there are two obs that could also support a position at 93W.

On the 12Z map, the aircraft observation taken from 8,000 ft at 27.2N, 94.5W appears to be suspicious and should probably be disregarded. On the 18Z map, it is important to remember that for aircraft observations, dotted lines on the wind barbs are for estimated surface winds, whereas solid lines are for flight-level (or so we believe). On the 18Z map, the ob at 26.5N, 92.9W has a northerly surface wind. While it is possible that the position at 18 UTC may have been as far west as 92.0W, the previous analysis is unchanged and 91.5W is kept as the longitude at 18 UTC.

3. The Monthly Weather Review (MWR) climate table shows that Port Arthur, Texas had a peak monthly wind of 38 mph on 19 July. If possible, please obtain the Port Arthur OMR to get more information on this ob, and the ob should be noted somewhere in the metadata.

The Port Arthur OMR indicates the max 5-min wind at Port Arthur of 38 mph SE occurred on the 19th sometime between 6 pm and 7 pm. There were not any large or abrupt wind shifts that day, although the winds did shift a little bit during the time of that wind. The pressure at 0030 UTC on the 20th was 1014 mb. The ob was added to the July 20 metadata.

4. Please provide a more rigorous explanation as to why the peak intensity was lowered to 35 kt and why development to a tropical storm is delayed 18 hours. The basis for these decisions is unclear.

Aircraft observations on the 19th indicate a very weak circulation on that day – definitely below tropical storm strength. Thus, the timing that tropical storm strength was obtained is delayed. The aircraft reconnaissance flight on the morning of the 20th failed to find any gale force winds, although the winds were slightly stronger than on the 19th. Due to the Port Arthur ob, the TS strength is retained, but only as a 35 kt TS. This has been added to the metadata summary.

5. Is the data for 1200 UTC 22 July strong enough to justify adding a track point at that time? The metadata says a closed circulation was observed, but the Historical Weather Map (HWM) looks more like a sharp trough between Brownsville and Laredo. Please clarify this.

Agreed that the observations indicate that the system had dissipated by 12Z on July 22nd. This is consistent with the MWR Tracks of Lows as well.

1945 Storm #3:

1. Please re-examine the issue of the location and existence of the system on 1 August. First, the longitudes in the original HURDAT for 1 August are only a couple of degrees east of the 2 August longitudes, which looks strange given the subsequent rapid motion through the Caribbean. Second, while the aircraft data does not suggest a circulation near the current HURDAT position, there are westerly winds reported near 53-54W. This longitude would be more consistent with a fast-moving system than HURDAT's current 57W.

The solid wind vectors in the microfilm maps are flight level wind estimates, while the dashed wind vectors are surface wind estimates. While the system had a closed circulation at 7,000 to 10,000 ft above the ocean, at the surface the system was an open wave. Thus indicating genesis at 00Z on the 2nd is consistent with available observations.

2. The microfilm map for 1830 UTC 2 August shows a central pressure below 1005 mb. Please comment on this and the data that led to this analysis.

On the microfilm map from 1830 UTC on 2 August, Dominica reported NNW wind with a 1006.4 mb pressure. Martinique has 1006.7 mb at the time, St. Lucia had 1008.5 mb with a SW wind. The observation at Guadeloupe is somewhat unclear. Given these observations and the WB analysis on microfilm, it likely that the central pressure was below 1005 mb at 18 UTC on the 2nd.

2a. On a related note, is there any data available for minimum pressure in the Lesser Antilles as the storm passed through?

There is no other additional data available from the Lesser Antilles.

3. It should be noted that the 5 August HWM shows southwest winds at Guantanamo, Cuba. This suggests that the remains of the system are somewhere near eastern Cuba.

August 5th has been added to the daily summaries, COADS data have been obtained, and data have been plotted up. The SW wind at Guantanamo apparently was transient, as a ship at that same location reported 10 kt SE/1013 mb at 12Z, 10 kt SW/1013 mb at 13Z, and 25 kt SSE/1012 mb at 14Z. This does, however, suggest that indeed the remnants of the system were moving through eastern Cuba.

1945 Storm #4:

1. Please make sure that the summary of this system is re-written to reflect the Andy Hagen addendum, which has a 60 kt peak intensity. The committee agrees that the 65 kt aircraft winds of the 1945 era are not sufficient cause to upgrade this system to a hurricane.

Done.

2. A possible modern analog that could be mentioned in the metadata is Hurricane Debby of 2000.

So added.

3. Please re-check the proposed position for 1800 UTC 20 August. It seems to be east of where the data on the microfilm map suggests it should be.

Agreed to adjust the positions to the west late on the 20th and early on the 21st.

1945 Storm #5:

1. Is there any data available from 23 August that would help determine the genesis time?

An aircraft reconnaissance mission on the 23rd indicated that the system was an open trough. A daily summary has been added and the aircraft mission discussed in the closing paragraph.

2. The committee does not currently concur with the proposed decrease in the landfall intensity. There are several aspects of this that need re-examination:

a. Port Aransas was apparently inside the radius of maximum winds (RMW) early on 27 August with a pressure of near 983 mb. Twelve hours or more later, Port O'Connor and Palacios report pressures near 968 mb, which are not obviously inside the RMW. This suggests that storm deepened at least 15 mb (>1 mb/hr ?) near the Texas coast, which is counter-intuitive if a significant part of the eyewall was over land. Please re-examine the track to see if the data allows more of a track over water, which would be more consistent with the observed deepening.

Agreed to adjust track to just offshore (~5 nm) to the east of Port Aransas around 06Z. A 20 min lull occurred at that city between 06-07Z, though the Daily Weather Map listed 03-05Z as the time of the 983 mb lowest pressure. Perhaps because of this apparent disagreement, the MWR table did not list a time for the lowest pressure. One possibility is that a lower pressure occurred during the lull during 06-07Z, though this value was not recorded. Because of this uncertainty, the 983 mb pressure value is not considered a central pressure and is not added into HURDAT.

It should be noted that the Galveston Engineer Office report states that the center went 5-6 miles west of Port Aransas. Is this correct based on the available data?

There is no wind data from Port Aransas. The closest wind observations early on the 27th were from Corpus Christi which clearly indicated a track well to the east of that location, as winds shifted from NE to NW during the day. The revised track takes the cyclone very close, but just to the east of Port Aransas. This contradiction is now described in the daily summary and metadata report.

b. The center apparently passed between Seadrift and Port O'Connor with neither station reporting a calm. Seadrift and Port O'Connor are 17 n mi apart, and if the reported lack of calm is correct the eye diameter was smaller than that. In turn, that means the 18-20 n mi RMW from Ho et al and the Hagen addendum is too large – perhaps by a factor of two. Please re-examine the RMW size at landfall, including checking Ho et al to see if they know of any lull or partial calm at Seadrift and Port O'Connor.

The lack of a calm at either Seadrift and Port O'Connor is very good evidence of a smaller RMW than originally estimated by Ho. Given the distance between the two, an RMW of 10 nm is now estimated to have occurred at landfall for this hurricane.

c. In the Daily Weather Map binder entry and the MWR, Seadrift's minimum pressure was 29.10 inches compared to Port O'Connor's 28.60 inches. If the Seadrift pressure is correct, this also supports a small RMW system passing closer to Port O'Connor.

Agreed to have the track of the hurricane pass closer to Port O'Connor than Seadrift.

d. The MWR states that in Port O'Connor the anemometer cups blew away at the time the wind reached 91 kt.

This fact is now included and factored into the revised intensity. It is likely that this was a gust, not a 5 min wind.

Please re-evaluate the landfall intensity based on all of the above. The committee currently believes that the system should remain a major hurricane based on the available data.

Agree to have this system as a major hurricane at landfall. This actually necessitates an upgrade from Category 2 to Category 3 for the Saffir-Simpson Hurricane Wind Scale designation, while the intensity in HURDAT is dropped from 115 kt to 100 kt.

3. The 27 August metadata states that the time of the Port O'Connor pressure is unknown. In the Daily Weather Map table, it is listed as Noon EWT 27 August. Please add this to the metadata.

Added.

4. In the OMR section of the binder, there is a daily weather record for Palacios for 27 August that ends before the peak conditions arrive. Is the next portion of this record available?

No, those were all of the measurements obtained at Palacios on that date.

4. The MWR mentions that lower pressure were measured that were considered "doubtful". Please make an effort to find these pressures so they can be evaluated.

Additional information on these "doubtful" pressures was not found.

5. There is a typo in the 27 August metadata: "possible central p pressure?"

Fixed.

6. The metadata summary states that the analyzed landfall intensity was used to adjust two preceding two days of the intensity. Is this justifiable? Perhaps adjusting only a day or so would be better.

Agreed.

1945 Storm #6:

1. There is a glitch in the HURDAT printout – one of the 30 August lines is missing.

This is because there were no track or intensity changes implemented on this day, so a 2nd line is not needed.

2. Please clarify whether the minimum pressure at Belize City was 990 mb or 993 mb, as well as the time at which it occurred. The MWR excerpt says the minimum pressure was 993 mb two hours after the calm, which is counter-intuitive.

Table 4 in MWR (page 5, January 1946) had the 990 mb, which it is assumed was measured during the calm around 1730Z.

3. On a related note, the microfilm maps at 1830 UTC 31 August shows a closed 990 mb isobar. Is this based on the Belize city ob, or one of the aircraft obs?

This appears to be based upon the Belize city observation.

4. The committee concurs with the rest of the proposed changes.

Thank you.

1945 Storm #7:

1. Please re-examine the genesis time and location of this system. While the microfilm map for 1830 UTC 2 September shows a large low pressure area, the map for 1230 UTC 3 September shows a large area of southwesterly winds to the southeast of what looks like an elongated open trough. Based on this and the following map at 1830 UTC 3 September, the original HURDAT genesis time may be better. If the system is kept as a cyclone at 1200 UTC 2 September, the position likely needs to be adjusted northward or northeastward.

Agreed to keep genesis at 18Z on the 3rd, as originally shown in HURDAT.

2. What information is available from Cuba and Perez on this system?

Perez et al. indicate that this system was a tropical depression for Cuba and not a tropical storm as there were no gale force winds/low pressure over Cuba, nor were there tropical storm force wind impacts. Based upon this and the ample observations, the system is now begun as a tropical depression with intensity of tropical storm at 12Z on the 4th, north of Cuba.

3. The Miami OMR shows a "maximum velocity" of 44 mph and an "extreme velocity" of 52 mph on 4 September during the passage of this system. Which of these is closest to a 1-minute wind? Please note these obs somewhere in the metadata.

A maximum velocity (max 5-min wind) of 44 mph (38 kt) converts to a max 1-min wind of 41 kts. An extreme (fastest mile) wind of 52 mph (45 kt) converts to a max 1-min wind of about 46 kt. However, the anemometer at Miami was significantly elevated in 1945 at 68 m. These winds likely reduce to approximately 35 kt at 10 meters.

4. Regarding the 40-kt observation near Islamorada on the microfilm map for 1830 UTC 4 September: Is it an aircraft ob? A ship ob? A lighthouse ob? If it's the latter, some adjustment of the ob and the peak intensity may be necessary.

The 40 kt ob near Islamorada is Alligator Reef lighthouse. Given this elevated observations, the original HURDAT peak intensity of 35 kts is more appropriate and has been kept.

5. What is the evidence that the system actually made landfall on the southwestern coast of Florida? Please note the obs that specifically show this.

Hourly observations from the Fort Myers (26.6N 81.8W) airport show that the center did not go east of that location. However, at 00Z a ship reported north winds at 20 mph at a location of 26.5N 82.3W – only ~10 nm offshore. This is the main reason for showing a landfall for this minimal tropical storm in southwest Florida, which is consistent with the original HURDAT. A map showing the locations of the original/revised HURDAT, Fort Myers airport, and the ship is provided.

6. There are two typos in the metadata summary: "Florida at 00Z onf the 5th " and "system did made a second landfall".

This has been corrected.

1945 Storm #8:

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

Thank you.

2. The information about the 1009 mb central pressure is shown in a note on the 10 September 0030 UTC microfilm map. Can it be determined what flight level that pressure was derived/measured from?

It appears as though the aircraft was flying around 2,000 ft when the central pressure was measured. The central pressure was estimated via extrapolation to the surface from that height.

3. Please provide a better explanation for the track changes on 11 September. First, please explicitly state what observations justified the left shift. Second, please re-examine the proposed position for 1200 UTC. The microfilm map for 1230 UTC shows an observation near 26.5N 66.5W that supports a more northerly position, even allowing for the ob to be a few hours later than the synoptic time.

The ob at 26.5N, 66.5W is an aircraft estimated surface wind from the south. A longitude of 67.0W would put the center west of all of the observed southerly surface winds, and fits with all observations. The position was also adjusted slightly southward due to all the surface winds from the southeast between 24.5-25.5N, 64.5-66.1W.

4. Is any detailed data available from Bermuda for this system?

The Bermuda Weather Service was contacted. They did not have any gale force winds recorded from this system.

5. The committee does not occur with the proposed extratropical transition. The 1200 UTC 12 September HWM shows a cold front several hundred miles from the tropical cyclone, which is likely to far away to produce a transition six hours later. Please provide a better justification for the transition, or go with the original HURDAT scenario of dissipation before transition.

Agreed to remove extratropical portion.

1945 Storm #9:

1. Regarding the reduction of the initial intensity to 50 kt: Is that based on data actually taken near 0000 UTC 12 September or from later data? The binder maps do not show recon data that seems to be near 0000 UTC 12 September. Indeed, the reference to 50 kt surface winds is written on a map labeled 1430-1830 UTC. Also, did the aircraft in question fly near the center, or fly around it? Please clarify these things.

The aircraft reconnaissance data was conducted late on the 12th. It appears that the mission was a circumnavigation fix, not a penetration fix. Therefore, the 50 kt surface winds estimated by the crew likely cannot be considered an intensity value, especially given the large radii that the aircraft flew around the cyclone. The original intensity values from HURDAT are now retained.

2. Is the 972 mb ob plotted on the 0830-1230 UTC 13 September microfilm map and used in the original HURDAT actually a central pressure? It looks like the value is written close to a data point with very strong winds. How was this pressure measured or derived? Does an original coded version of this ob exist?

The observation was interpreted incorrectly. The value actually is 997.2 mb with 60 mph S winds. The 972 mb value is now removed from HURDAT and the original intensity analysis of 100 kt is retained.

3. It is unclear that the eye actually passed over Turks Island and that the 977 mb pressure there was actually a central pressure. Please provide the evidence that this pressure was measured inside the eye. If that is not available, please use the higher intensities from the original HURDAT for 14 September and remove this as a central pressure.

It is agreed that it is unknown whether this was a central pressure or a peripheral pressure value. It is removed from HURDAT and the original intensities retained.

4. On a related note, has the Bahamas Weather Service been contacted for information on this system?

The Bahamas Weather Service has been contacted, but they have no additional information regarding this hurricane.

5. In regard to the landfall intensity in southeastern Florida:

a. What is the anemometer height of the Carysfort Reef station, and what is the 1-minute equivalent 10-m wind? These values were marked as ?? in the metadata, with no correction to that in the Hagen addendum.

The exact anemometer height is unknown, but typical lighthouses anemometer heights were on the order of 40m. The 5-min wind of 107 kt converts to a 1-min wind of 113 kt (multiplied by 1.06). The fastest mile wind of 120 kt converts to a 1-min wind of 113 kt (divided by 1.06). The 113 kt 1-min wind reduced to 10m gives 102 kt (0.9).

b. Is a complete record of the Carysfort Reef obs available? An interesting aspect is that the strongest winds were from the southwest, which suggests the possibility the station did not sample the maximum wind of the northwestward-moving hurricane.

The Carysfort Reef records for September 15th were obtained via the EV2 website. Unfortunately, these only contain the synoptic observations taken and did not include the peak wind/minimum pressure information quoted in the Monthly Weather Review.

c. The committee concurs with the proposed landfall intensity pending a review of the above two points.

Agreed.

6. In regards to the intensity while over the Florida Peninsula:

a. Moore Haven reported a fastest-mile wind of 70 kt near 2:30 AM local time 16 September. Has this been factored into the intensity estimate for 0600 UTC? It appears likely given the track and the seemingly more severe damage in La Belle that Moore Haven was not in the RMW.

This is incorporated in the comparison against the Kaplan-DeMaria model, which only suggested 59 kt at 06Z on the 16th. The intensity selected is 85 kt (down from 110 kt originally in HURDAT).

b. What is the height of the Ponce De Leon light, and what is the adjusted 1-minute equivalent 10-m wind for the 70 kt ob? It should be noted that the fastest-mile wind from

this station was 78 kt. Please also provide similar information for the observations at the St. Augustine Light and the Cape Canaveral Light.

Again the exact anemometer height is unavailable, but 40 m above the ground is going to be roughly correct. A "fastest mile" wind of 78 kt (90 mph) is the wind averaged over a period of 40 seconds. Converting that to 1-min yields 76 kt (divided by 1.03). Adjusting this to 10 m obtains 68 kt.

c. The data table in the MWR shows reports from several other stations across the central Florida Peninsula (e.g. Lakeland, Orlando, Sanford, Deland). Did the eye or its remnants pass over any of these stations? If so, what impact would that have on the proposed intensities?

The station data for these locations was obtained from the EV2 website. They revealed that the Lakeland station was west of track and the Orlando, Sanford, and Deland sites were east of track. None experienced the eye.

7. Please provide a 1-minute 10-m equivalent wind for the 74 kt fastest-mile easterly winds at Parris Island. Can it be determined if the 991 mb pressure from that station was a central pressure?

The MWR table had mistakenly indicated that Paris Island had a fastest mile wind of 74 kt E. However, the original records from Paris Island show that these were gusts and the strongest sustained (5 min) winds were only 39 kt E at 0830Z. Maximum winds at landfall are analyzed to be 60 kt, a high end tropical storm. A 992 mb pressure (no wind provided) was recorded at Paris Island (now "Parris Island"), SC at 1145Z and 993 mb with 30 kt E was observed 15 minutes earlier. This indicates a central pressure of 990 mb, which replaces the 991 mb in HURDAT.

8. The committee concurs with the proposed earlier time of extratropical transition.

Thank you.

1945 Storm #10:

1. The committee concurs with an earlier proposed genesis. However, due to the lack of data showing a closed circulation at 0000 UTC 2 October, it is recommended that the system be started as a tropical storm at 0600 UTC that day. Also, please examine the data for 30 September-1 October, as the HWM suggested that a low pressure area/monsoon trough existed over the western Caribbean as early as 30 September.

Data and the HWM/microfilm were obtained back to 30 September. These do indicate that significantly lower than usual pressure covered the western Caribbean and Central America, but no closed circulation was present based upon observations that are available. Agreed to begin the cyclone at 06Z on the 2nd.

2. Please remove the reference to the damage on Swan Island in the 3 October metadata unless it is used to calibrate the track or intensity.

We'd prefer to keep this. It is only one sentence and shows that the winds were strong enough to knock down hundreds of coconut trees.

3. Is it possible that the positions at 1200 and 1800 UTC 2 October are too far north based on the aircraft data during the afternoon? Perhaps a position south of 16N is better?

Agreed to adjust the positions southward late on the 2nd to south of 16N.

4. The committee has some concerns about the aircraft data and the proposed reduced peak intensity:

a. How were the aircraft central pressures on 2 October measured or derived? What flight level were the aircraft at when these obs were made? Can any estimate of the RMW be made from the available aircraft data?

The committee likely is referring to 3 October, which is the date that the two aircraft central pressure measurements were made.

The central pressure measurements were made by extrapolation from low-levels. Beginning in 1945, aircraft reconnaissance has both a pressure altimeter and a height altimeter. In my thesis, I stated that if the plane was flying at a height of around 2,000 ft. or less, and they report a center pressure in the center by extrapolation, we consider it to be pretty accurate – certainly to within 2 or 3 mb. Beginning in around 1950, aircraft would perform 700 mb penetrations and they would report the 700 mb height inside the eye. But they didn't have the 700 mb temperature to go along with it until I believe the late 1950s. Higher than about 850 mb, they would need eye temperature data to accurately extrapolate height down to surface. In this particular case, the aircraft was flying at 1,200 to 1,700', as seen in the microfilm observations around 12Z on the 3rd. No estimate of the RMW was possible here, as an eye diameter was not reported. (RMW estimates directly from the aircraft reconnaissance wind are not possible during the 1940s and 1950s.)

b. What would 982 mb yield on the wind-pressure relationship for the subset of intensifying storms? This might be more appropriate for this system than the southern subset.

982 mb yields 76 kt according to the Brown et al. southern pressure-wind relationship for intensifying systems (1 kt higher than the 75 kt it yields for just the southern p-w relationship). The pressure-wind relationships are included as an appendix to this set of replies.

c. The storm was intensifying at the time of the aircraft missions. Is it possible that this continued up to landfall (as other recent storms have done in that area), and that the cyclone made landfall as a category 2 hurricane? Has the Belize Meteorological Service been contacted for information on this system?

Yes, it is possible – perhaps likely – that the system continued to intensify up until landfall. Unfortunately, the Belize Meteorological Service has no further information about this hurricane. Given the severe wind-caused damage described in the Monthly Weather Review, indicating this hurricane at the high end of a Category 1 hurricane at landfall – 80 kt – is a reasonable solution in the absence of additional information.

d. The committee will leave the issues of the peak and landfall intensities open pending resolution of the above points.

6. Is the minimum pressure at Tela, Honduras 995 or 997 mb? Both are used in different parts of the metadata.

Tela, Honduras had 997 mb with 10 kt SSW at 09 UTC. The minimum pressure at Tela was 995 mb (time unknown).

7. The committee does not concur with the proposed tropical storm status over the eastern Pacific. First, the Atlantic wind pressure relationships likely do not work in the monsoon/monsoonish environment in place at that time over the eastern Pacific. Second, in such an environment the strongest winds are often in the westerly flow south of the center where the 25-30 kt winds seen on 6 October occurred. Thus, it would be difficult to use these winds to show the existence of stronger winds elsewhere in the circulation. It is recommended that the system be kept a depression over the Pacific unless there is direct evidence of tropical-storm-force winds.

Agreed. The 6th and 7th are added into HURDAT, but lowered intensity to 30 kts for all times when previously it was indicated with tropical storm intensity.

1945 Storm #11:

1. The article by Fernandez-Partagas mentions the existence of a special catalog of Cuban hurricanes by Rodriguez-Ramirez published in 1956. Does the Re-Analysis project have a copy of this catalog?

No. But these have been utilized and incorporated into the more recent Cuban catalog of hurricanes by Perez et al. (2000).

2. Has Perez been consulted for additional information on this storm?

Perez was not able to provide any additional information over and above what has already has been obtained.

3. The 35-kt wind in Barranquilla at 1200 UTC 10 October is far from the center of what was supposed to be a small tropical cyclone. Please review the relevance of this ob in that light. Has the Meteorological Service of Colombia been contacted for additional information on this?

The 35 kt SW wind with 1012 mb in Barranquilla occurred 180 nm southeast of the analyzed centered position at 12Z on the 10th. Given the relatively high pressure, it appears that this observation likely is not directly related to the circulation of the cyclone and/or was a transient event. The system is retained as a tropical depression on the 10th.

4. Typo in the 10 October metadata and in the metadata summary: "Columbia".

This has been corrected.

5. This system passed near Cayman Brac. Has the Meteorological Service of the Cayman Islands been contacted for additional information?

The Meteorological Service of the Cayman Islands was unable to provide any additional information regarding this system.

6. The 1000 mb pressure measured as the storm crossed Cuba was not a central pressure and should be removed from HURDAT. Given the uncertainties, the 980 mb pressure derived from that pressure should not be entered into HURDAT either.

Agreed. 980 mb has been removed.

7. The metadata summary states that the hurricane was moving 8 kt while crossing Cuba, which contradicts the Fernandez-Partagas paper motion of 16-17 kt. The best track positions suggest the latter motion is correct. Since the "slow" motion was the basis for reducing the peak intensity to 80 kt, the committee recommends keeping the original intensities while the storm crosses Cuba.

Based up the reanalyzed track, the cyclone was moving at 11-12 kts at Cuban landfall. Agreed to keep the original HURDAT intensity of 85 kt at 10/12 12Z despite the Perez assessment of a Cat 1 for Cuba. We do not know what the central pressure was. Although we had a 65-70 kt ob, the winds could have easily been higher since we barely had any other obs and this was a small storm. The intensity at 10/12 06 UTC is increased to 75 kt for smoothing purposes because there was no data at that time indicating that the intensity was only 70 kt. The appropriate changes have been made to the metadata summary.

8. The committee concurs with the proposed intensity changes over the Bahamas.

Thank you.

1945 Additional Notes:

1. General note: The numbering of the suspect areas on the ship report printouts does not match that of the metadata listing. For example, the western Gulf of Mexico suspect area in August is listed as #4 in the metadata and #8 on the printouts. Please correct this.

This is corrected. The suspect numbers listed in the metadata are the final correct suspect numbers. Originally, there may have been 30 to 50 suspects that were looked at each year, but only a handful of these made the cut into the additional notes section.

2. Regarding suspect system #4 in the Gulf of Mexico:

a. The committee would like to see the microfilm maps for this system, which are currently not in the binder.

These are now added to the binder.

b. The Brownsville OMR is referenced in the write-up of this system. Is it available? There are daily records from Brownsville in the binder, but these cover the Texas coast hurricane and not the suspect system.

Added. No tropical storm force winds nor any low pressures were observed.

c. The 30-kt 1006-mb ship report referenced in the write-up is not in the binder data printout for this system. Please add it.

Added.

3. The committee concurs with leaving the remainder of the suspect systems out of HURDAT.

Thank you.

Spreadsheet for Pressure-Wind Relationships

Central Pressure	Brown S 25N	Brown N 25N	Brown S 25N I	Brown S 25N W	Brown N 25N I	Brown N 25N W	Neumann N 35N	Dvorak
1008	30	28	28	32	29	27	32	30
1007	32	30	31	35	31	29	35	
1006	35	32	34	37	33	32	37	
1005	37	34	36	39	36	33	40	35
1004	39	36	38	41	38	35	42	
1003	41	38	41	43	40	37	44	

1002	43	40	43	45	42	39	45	
1001	45	42	45	47	44	41	47	
1000	47	44	47	48	45	42	49	45
999	49	45	49	50	47	44	50	
998	51	47	50	52	49	45	52	
997	53	49	52	54	51	47	53	
996	54	50	54	55	52	48	55	
995	56	52	56	57	54	50	56	
994	58	53	58	58	56	51	58	55
993	59	55	59	60	57	53	59	
992	61	56	61	61	59	54	60	
991	62	58	62	63	60	56	61	
990	64	59	64	64	62	57	63	
989	65	61	65	65	63	58	64	
988	67	62	67	67	65	60	65	
987	68	64	68	68	66	61	66	65
986	70	65	70	69	68	62	67	
985	71	66	71	71	69	63	68	
984	72	68	73	72	70	65	69	
983	74	69	74	73	72	66	70	
982	75	70	76	74	73	67	71	
981	76	71	77	76	74	68	72	
980	78	73	78	77	76	69	73	
979	79	74	80	78	77	71	74	77
978	80	75	81	79	78	72	75	
977	81	76	82	80	80	73	76	
976	83	77	84	81	81	74	77	
975	84	79	85	83	82	75	78	
974	85	80	86	84	83	76	79	
973	86	81	87	85	85	77	80	
972	88	82	89	86	86	78	80	
971	89	83	90	87	87	80	81	
970	90	84	91	88	88	81	82	90
969	91	86	92	89	89	82	83	
968	92	87	93	90	91	83	84	
967	93	88	95	91	92	84	85	
966	94	89	96	92	93	85	85	
965	96	90	97	93	94	86	86	
964	97	91	98	94	95	87	87	
963	98	92	99	95	96	88	88	
962	99	93	100	96	97	89	88	
961	100	94	101	97	98	90	89	
960	101	95	102	98	100	91	90	102
959	102	96	104	99	101	92	91	
958	103	97	105	100	102	93	91	
957	104	98	106	101	103	94	92	
956	105	99	107	102	104	95	93	
955	106	100	108	103	105	96	93	
954	107	101	109	104	106	97	94	
953	108	102	110	105	107	98	95	

952	109	103	111	106	108	99	96	
951	110	104	112	107	109	100	96	
950	111	105	113	108	110	101	97	
949	112	106	114	108	111	101	98	
948	113	107	115	109	112	102	98	115
947	114	108	116	110	113	103	99	
946	115	109	117	111	114	104	99	
945	116	110	118	112	115	105	100	
944	117	111	119	113	116	106	101	
943	118	112	120	114	117	107	101	
942	119	113	121	115	118	108	102	
941	120	114	122	115	119	109	103	
940	121	115	123	116	120	110	103	
939	122	116	124	117	121	110	104	
938	123	116	125	118	122	111	104	
937	124	117	126	119	123	112	105	
936	125	118	127	120	124	113	106	
935	125	119	128	120	125	114	106	127
934	126	120	129	121	126	115	107	
933	127	121	130	122	127	116	107	
932	128	122	130	123	128	116	108	
931	129	123	131	124	128	117	109	
930	130	124	132	124	129	118	109	
929	131	124	133	125	130	119	110	
928	132	125	134	126	131	120	110	
927	133	126	135	127	132	121	111	
926	133	127	136	128	133	121	111	
925	134	128	137	128	134	122	112	
924	135	129	138	129	135	123	112	
923	136	130	139	130	136	124	113	
922	137	130	139	131	137	125	114	
921	138	131	140	132	138	125	114	140
920	139	132	141	132	138	126	115	
919	139	133	142	133	139	127	115	
918	140	134	143	134	140	128	116	
917	141	135	144	135	141	129	116	
916	142	135	145	135	142	129	117	
915	143	136	146	136	143	130	117	
914	144	137	146	137	144	131	118	
913	144	138	147	138	144	132	118	
912	145	139	148	138	145	133	119	
911	146	139	149	139	146	133	119	
910	147	140	150	140	147	134	120	
909	148	141	151	140	148	135	120	
908	148	142	151	141	149	136	121	
907	149	143	152	142	150	136	121	
906	150	143	153	143	150	137	122	155
905	151	144	154	143	151	138	122	
904	152	145	155	144	152	139	123	
903	152	146	156	145	153	139	123	

902	153	147	156	145	154	140	124	
901	154	147	157	146	155	141	124	
900	155	148	158	147	155	142	125	
899	155	149	159	148	156	142	125	
898	156	150	160	148	157	143	126	
897	157	150	160	149	158	144	126	
896	158	151	161	150	159	145	127	
895	159	152	162	150	159	145	127	
894	159	153	163	151	160	146	128	
893	160	153	163	152	161	147	128	
892	161	154	164	152	162	148	129	
891	162	155	165	153	163	148	129	
890	162	156	166	154	163	149	129	170
889	163	156	167	154	164	150	130	
888	164	157	167	155	165	150	130	
887	165	158	168	156	166	151	131	
886	165	159	169	156	166	152	131	
885	166	159	170	157	167	153	132	
884	167	160	170	158	168	153	132	
883	168	161	171	158	169	154	133	
882	168	162	172	159	170	155	133	
881	169	162	173	160	170	155	133	
880	170	163	173	160	171	156	134	
879	170	164	174	161	172	157	134	
878	171	164	175	162	173	157	135	
877	172	165	176	162	173	158	135	
876	173	166	176	163	174	159	136	