

Joe should  
this should  
be included  
in our  
verification  
NHT



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL WEATHER SERVICE  
National Meteorological Center  
Washington, D.C. 20233

Date October 25, 1974

Reply to Attn. of: W335

To Director, NHC

From *N. E. Brown*  
H. E. Brown  
Chief, Basic Weather Branch, FD

Subject: Verification of Tropical Cyclone Forecast Positions Derived from  
NMC's 500 mb Progs

Ref: Hotline conversation in early October

As discussed with you on the hotline earlier this month, I am sending along 48 C-12 forms with operationally derived numerical forecast positions to be included in your verification of the NHC's and the NMC's subjective forecast positions. With you doing this much appreciated extra task, we will be able to compare directly our subjective forecasts with those from the barotropic and P. E. vort progs.

8-301-763-5966  
5967

OCT 30 1974



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL WEATHER SERVICE  
National Hurricane Center  
P. O. Box 8286  
Coral Gables, FL 33124

Date November 15, 1974

Reply to Attn. of:

To Mr. H. E. Brown  
Chief, Basic Weather Branch, FD, NMC

*Sent 11/15/74*

From Joseph M. Pelissier, Hurricane Specialist  
(Through: Director, NHC, Miami, Fl.) *njf*

Subject: Verification of Tropical Storm and Hurricane Track Forecasts

REF.: Your letter of October 25, 1974, and our phone conversation of November 15, 1974

Attached are the verification materials we discussed over the phone. As I mentioned, the calculations are performed in two ways. In the verification of the NHC products, we compute the 'displacement error', which is found by vectorial subtraction of the initial position error from the forecast error. The NHC and the NMC preliminary forecast tracks are compared using the 'vector error'. This is simply the magnitude of the vector from the forecast position to the appropriate 'best track' position (measured along a great circle). In the running of the program this is accomplished by arbitrarily setting the initial position error equal to zero.

Please look these over and let us know if you spot any errors. When numbers are exchanged over the phone in the heat of a hurricane situation there is always the possibility of errors. You will find a data listing at the end of each run.

I will plan on discussing the subjective forecasts and NHC objective tracks at the conference, and leave any discussion of the NMC PE and barotropic forecasts to your discretion.

Let me know if we can be of any further assistance.

*Note only those cases for which a system maintains at least tropical storm intensity during the entire forecast period are verified.*

*J. P.*

1974

TROPICAL CYCLONE FORECAST VERIFICATION

ALL STORMS - ALL FORECASTS

DISPLACEMENT ERRORS IN NAUTICAL MILES

FORECAST TYPE (NO. OF CASES)	FORECAST PERIOD				
	INITIAL POSITION	12 HOUR	24 HOUR	48 HOUR .....	72 HOUR
OFFICIAL	18 (99)	46 (99)	90 (86)	199 (62)	346 (41)
NHC-67	19 (100)	49 (100)	104 (87)	217 (63)	330 (43)
NHC-72	19 (100)	46 (100)	89 (87)	138 (63)	372 (43)
NHC-73	17 (48)	49 (48)	102 (42)	161 (31)	226 (21)
HURRAN	20 (53)	64 (53)	142 (44)	297 (31)	357 (26)
SANBAR	17 (48)	54 (48)	100 (41)	185 (30)	339 (20)
CLIPER	19 (100)	52 (100)	104 (87)	193 (63)	298 (43)

1974

TROPICAL CYCLONE FORECAST VERIFICATION

HOMOGENEOUS SAMPLE

DISPLACEMENT ERRORS IN NAUTICAL MILES

FORECAST TYPE (NO. OF CASES)	INITIAL POSITION	FORECAST PERIOD			
		12 HOUR	24 HOUR	48 HOUR	72 HOUR
OFFICIAL	17 (21)	50 (21)	96 (17)	218 (14)	364 (11)
NHC-67		47	102	195	303
NHC-72		49	78	197	285
NHC-73		50	86	146	230
HURRAN		60	123	273	330
SANBAR		60	100	206	381
CLIPER		60	106	231	343

1974

TROPICAL CYCLONE FORECAST VERIFICATION

HOMOGENEOUS SAMPLE

DISPLACEMENT ERRORS IN NAUTICAL MILES

<u>FORECAST TYPE</u>	<u>INITIAL POSITION</u>	<u>FORECAST PERIOD</u>			
		<u>12 HOUR</u>	<u>24 HOUR</u>	<u>48 HOUR</u>	<u>72 HOUR</u>
OFFICIAL (CASES)	19 (97)	46 (97)	90 (85)	199 (62)	346 (41)
NHC-67		49	103	219	335
NHC-72		45	85	199	364
CLIPER		49	98	193	306

1974

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HOMOGENEOUS SAMPLE

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		12 HOUR	24 HOUR	48 HOUR	72 HOUR
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1974

TROPICAL CYCLONE FORECAST VERIFICATION

HOMOGENEOUS SAMPLE

DISPLACEMENT ERRORS IN NAUTICAL MILES

<u>FORECAST TYPE</u>	INITIAL POSITION	FORECAST PERIOD			
		12 HOUR	24 HOUR	48 HOUR	72 HOUR
OFFICIAL (CASES)	19 (97)	46 (97)	90 (85)	199 (62)	346 (41)
NHC-67		49	103	219	335
NHC-72		45	85	199	364
CLIPER		49	98	193	306

1974

TROPICAL CYCLONE FORECAST VERIFICATION

HOMOGENEOUS SAMPLE

MAGNITUDE OF THE VECTOR ERRORS IN NAUTICAL MILES

<u>FORECAST TYPE</u>	<u>FORECAST PERIOD</u>			
	<u>12 HOUR</u>	<u>24 HOUR</u>	<u>48 HOUR</u>	<u>72 HOUR</u>
OFFICIAL (CASES)	50 (17)	88 (18)	206 (16)	297 (12)
NHC	54	101	210	300
NMC	63	113	215	310



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