



SPACE LAUNCH DELTA 45

TROPICAL CYCLONE QUICK REFERENCE GUIDE



STAGES OF TROPICAL CYCLONE DEVELOPMENT

TROPICAL DISTURBANCE TROPICAL WAVE OR LOW PRESSURE CENTER	TROPICAL DEPRESSION < 34 KTS (< 39 MPH) NUMBERED WARNINGS BEGIN	TROPICAL STORM SUSTAINED WINDS 34 - 63 KTS (39 - 73 MPH) NAMING BEGINS	 HURRICANE SUSTAINED WINDS ≥ 64 KTS (74 MPH)
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SAFFIR-SIMPSON SCALE HURRICANE DESTRUCTION POTENTIAL

CATEGORY	SUSTAINED WIND SPEED		DAMAGE
	KNOTS	MPH	
1	64 - 82	74 - 95	MINIMAL
2	83 - 95	96 - 110	MODERATE
3	96 - 112	111 - 129	EXTENSIVE
4	113 - 136	130 - 156	EXTREME
5	≥ 137	≥ 157	CATASTROPHIC

NOTE: CATEGORIES 3, 4, & 5 ARE CONSIDERED MAJOR HURRICANES

HURRICANE CONDITIONS (HURCON)

HURCON	HURCON 5	HURCON 4	HURCON 3	HURCON 2	HURCON 1
⌚ TIME	96 HRS	72 HRS	48 HRS	24 HRS	12 HRS
HURCONs are based upon forecast on-set of destructive winds (50 knots/58 mph) at a specific location. The timelines are defined in AFMAN 10-2504, <i>Air Force Incident Management Guidance for Major Accidents and Natural Disasters</i> , and Space Launch Delta 45 Installation Emergency Management Plan 10-2. The Space Launch Delta 45 Commander or designated representative will declare HURCONs when appropriate.	Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 96 hours.	Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 72 hours.	Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 48 hours.	Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 24 hours.	Indicates surface winds in excess of 50 knots (58 mph) could arrive within 12 hours.
	HURCON 1C Caution: Winds of 35-49 knots (40-57 mph) sustained are occurring.	HURCON 1E Emergency: Winds of 50 knots (58 mph) sustained and/or gusts of 60 knots (69 mph) or greater are occurring and other dangerous conditions associated with the storm are present. All outside activity is strictly prohibited.			HURCON 1R Indicates life-threatening storm hazards have passed but damage may persist and only emergency responders and damage assessment personnel are released to move about. In the SLD 45 this requires a "Weather Safe" declaration (a joint decision with NASA-KC Director). Weather Safe (Hurcon 1R) can only be declared when winds in excess of 35 knots (40 mph) have subsided for a sustained period of two hours or more.



45TH WEATHER SQUADRON

Multi-Domain Operations Center:
Comm: 321-853-8484 DSN: 467-8484

E-mail: 45WS.WXR.AirfieldRangeWxOps@us.af.mil
<https://www.patrick.spaceforce.mil/About-Us/Weather/>



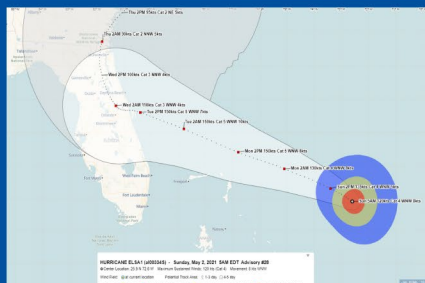
ADDITIONAL LINKS:

National Hurricane Center (NHC) - <http://www.nhc.noaa.gov>
National Weather Service - Melbourne - <http://www.weather.gov/mlb/>



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Wind Threat Timing For Tropical Cyclone HURRICANE ELSA

Advisory #28

Note: All Wind Speeds are Sustained

				CLOSEST POINT OF APPROACH		EVENT PRECIPITATION	
				DISTANCE	TIME	AMOUNT	START TIME
PSFBS	SUSTAINED WINDS	START	END	3 NM	4:00 PZDZ	6.00-7.00 IN	05 MAY 2000
	25 KT	03 MAY 2000	05 MAY 2000	WIND SPEED	34 KT	50 KT	60 KT
	34 KT	04 MAY 2000	05 MAY 2000	PROBABILITY OF OCCURRENCE	60%	85%	63%
	MAX SPEED	45 KT	04 MAY 2000				
				CLOSEST POINT OF APPROACH		EVENT PRECIPITATION	
				DISTANCE	TIME	AMOUNT	START TIME
CCSFS	SUSTAINED WINDS	START	END	3 NM	4:00 PZDZ	6.00-7.00 IN	05 MAY 2000
	25 KT	03 MAY 2000	05 MAY 2000	WIND SPEED	34 KT	50 KT	60 KT
	34 KT	04 MAY 2000	05 MAY 2000	PROBABILITY OF OCCURRENCE	60%	85%	63%
	MAX SPEED	45 KT	04 MAY 2000				
				CLOSEST POINT OF APPROACH		EVENT PRECIPITATION	
				DISTANCE	TIME	AMOUNT	START TIME
JDMTA	SUSTAINED WINDS	START	END	3 NM	4:00 PZDZ	6.00-7.00 IN	05 MAY 2000
	25 KT	03 MAY 2000	05 MAY 2000	WIND SPEED	34 KT	50 KT	60 KT
	34 KT	04 MAY 2000	N/A	PROBABILITY OF OCCURRENCE	45%	58%	14%
	MAX SPEED	35 KT	04 MAY 2000				

45 WS TROPICAL CYCLONE ADVISORIES:

This product will be e-mailed to Space Launch Delta leadership, units and mission partners when a tropical cyclone is in the AOR. The body of the e-mail will highlight specifics about the current storm location, intensity and movement. The image will show the projected storm track, forecast uncertainty, and projected extent of wind fields.

Tropical cyclone forecasts have varying levels of uncertainty. This forecast uncertainty is conveyed by the forecast "cone", the white, shaded area extending and widening progressively along the anticipated storm track. The entire 5-day path of the center of the cyclone will remain within the cone approximately 60-70% of the time.

Tables indicate forecast information for PSFB, CCSFS, JDMTA, and KSC. This includes beginning/ending times for specific wind speed thresholds, maximum expected wind speed, storm closest point of approach (CPA), precipitation start time and amount expected, and wind speed threshold probability of occurrence.

Wind Threat Timing For HURRICANE ELSA

Advisory #28

Note: All Wind Speeds are Sustained

KSC	SUSTAINED WINDS	START	END
	25 KT	03 MAY 2000	05 MAY 2000
	34 KT	04 MAY 2000	05 MAY 2000
	MAX SPEED	45 KT	04 MAY 2000

PSFB	CLOSEST POINT OF APPROACH	EVENT PRECIPITATION		
	144	TIME	AMOUNT	START TIME
	DISTANCE	1 MAY	0.00 - 2.00 in	04 MAY 2000
	34 KT	04 MAY	0.00 - 0.47 in	04 MAY
	PROBABILITY OF OCCURRENCE	60%	95%	95%

Estimated Hurricane's Actual Time of Tropical Storm Force Winds

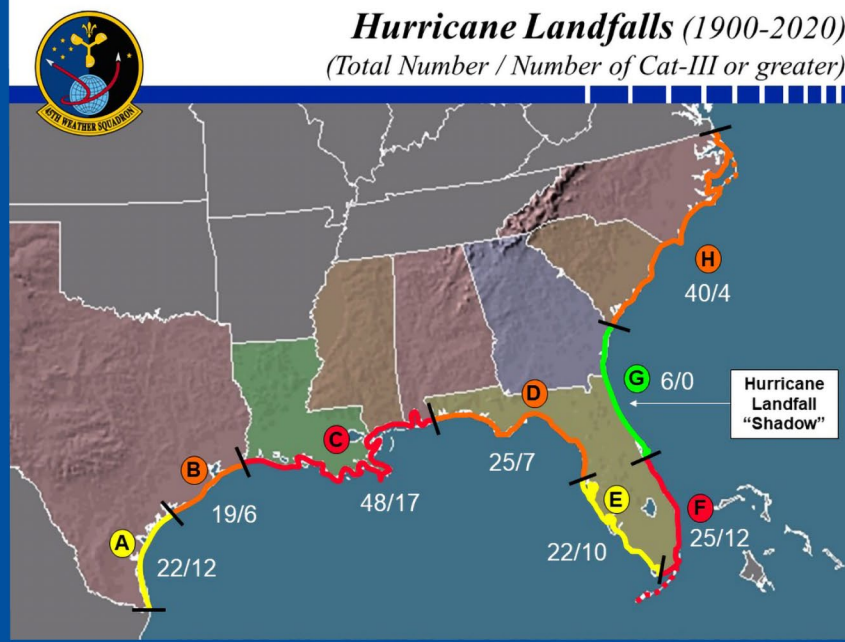
Estimated Hurricane's Actual Time of Sustained Tropical Storm Force Winds

Best Liked Actual Time of Tropical Storm Force Winds

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HURRICANE LANDFALL MAP:

- First number in each region indicates the number of hurricanes which made landfall
- Second number in each region indicates the number of hurricanes which made landfall as a Category 3 hurricane or greater
- Landfall threat spectrum per mile: Red (high risk), Orange, Yellow, Green (low risk)



Hurricane Shadow - An area defined by relatively low occurrence of hurricanes making landfall due to the specific orientation of the shoreline relative to storm origination and general storm motion. The hurricane shadow along the east coast of Florida and Georgia is due to the two main tracks of hurricanes in the eastern Atlantic Ocean as they approach the U.S. One typical storm track shows hurricanes tend to move westward from the Atlantic and make landfall in southern Florida or pass into the Gulf of Mexico. The other main track shows hurricanes often approach the Florida Space Coast, but recurve away before making landfall. NOTE: These numbers do not include tropical depressions, tropical storms or hurricanes which failed to make landfall. Storms which do not make landfall can still cause damage and threaten lives due to inland flooding, severe thunderstorms and tornadoes.



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TROPICAL DISTURBANCE

(
TROPICAL WAVE
OR
L
LOW PRESSURE CENTER

TROPICAL DEPRESSION

< 34 KTS
(< 39 MPH)

NUMBERED
WARNINGS
BEGIN

TROPICAL STORM

SUSTAINED
WINDS
34 - 63 KTS
(39 - 73 MPH)

NAMING
BEGINS

HURRICANE

SUSTAINED
WINDS
≥ 64 KTS
(74 MPH)

SAFFIR-SIMPSON SCALE HURRICANE DESTRUCTION POTENTIAL

CATEGORY	SUSTAINED WIND SPEED		DAMAGE
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HURRICANE CONDITIONS (HURCON)

HURCON

⌚ TIME

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HURCON 5

96 HRS

Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 96 hours.

HURCON 4

72 HRS

Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 72 hours.

HURCON 3

48 HRS

Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 48 hours.

HURCON 2

24 HRS

Indicates sustained surface winds in excess of 50 knots (58 mph) could arrive within 24 hours.

HURCON 1

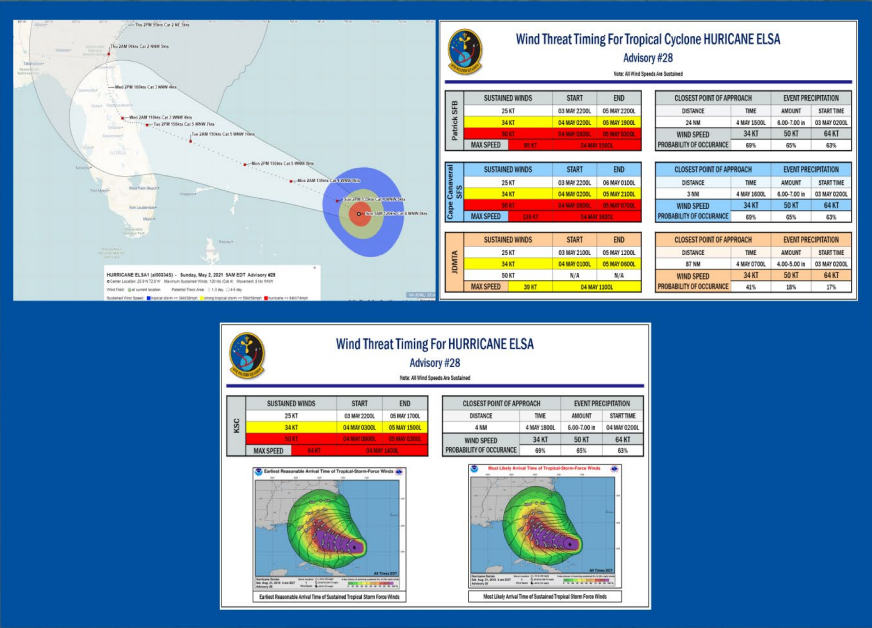
12 HRS

Indicates surface winds in excess of 50 knots (58 mph) could arrive within 12 hours.

HURCON 1C
Caution: Winds of 35-49 knots (40-57 mph) sustained are occurring.

HURCON 1E
Emergency: Winds of 50 knots (58 mph) sustained and/or gusts of 60 knots (69 mph) or greater are occurring and other dangerous conditions associated with the storm are present. All outside activity is strictly prohibited.

HURCON 1R
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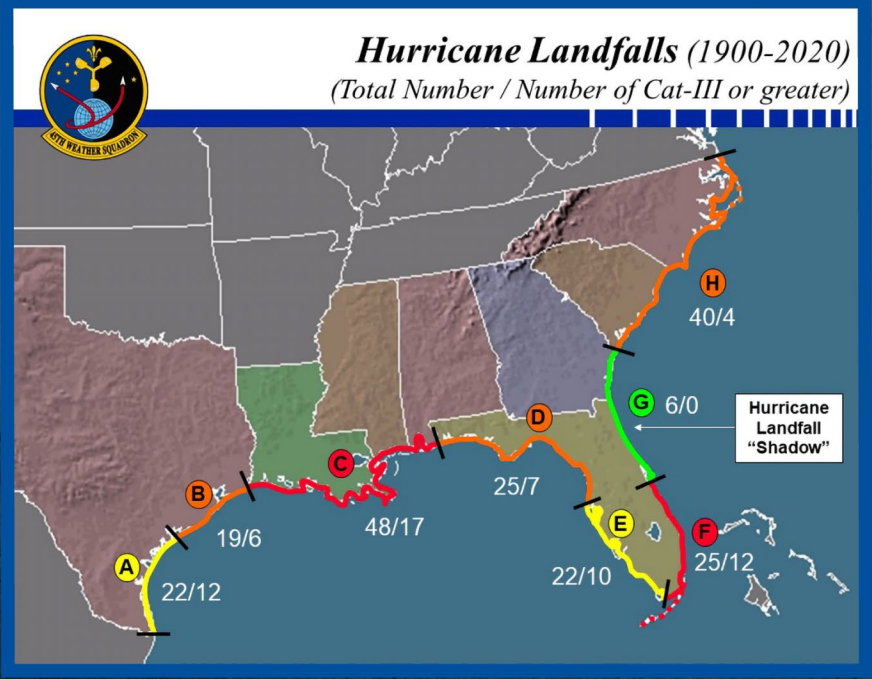


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