

PRELIMINARY REPORT

HURRICANE JUAN

26 OCTOBER-1 NOVEMBER 1985

SYNOPTIC HISTORY

A BROAD TROUGH OF LOW PRESSURE SLOWLY FORMED OVER THE CENTRAL GULF OF MEXICO DURING 24 OCTOBER, APPARENTLY AS THE RESULT OF INTERACTION BETWEEN AN UPPER LEVEL LOW PRESSURE SYSTEM DROPPING SOUTHEASTWARD FROM TEXAS AND A WESTWARD MOVING TROPICAL WAVE. SATELLITE DATA INDICATED A RAPID INCREASE IN CLOUDINESS AND SHOWERS OVER THIS AREA DURING THE DAY WHICH CULMINATED IN THE FORMATION OF A DEPRESSION ON 25 OCTOBER. AT THE SAME TIME, EASTERLY WINDS APPROACHING GALE FORCE DEVELOPED OVER A BROAD AREA OF THE NORTHERN GULF OF MEXICO AS FALLING PRESSURES IN COMBINATION WITH A LARGE HIGH PRESSURE SYSTEM COVERING THE EASTERN U.S. INCREASED THE GRADIENT.

ON THE MORNING OF 26 OCTOBER SATELLITE CLASSIFICATION INDICATED THAT THE DEPRESSION HAD STRENGTHENED TO A TROPICAL STORM AND THIS WAS CONFIRMED BY NOAA RECONNAISSANCE THAT AFTERNOON. TROPICAL STORM JUAN HAD MANY OF THE CHARACTERISTICS OF A SUBTROPICAL STORM WITH THE BAND OF STRONGEST SUSTAINED WINDS WELL AWAY FROM THE CENTER.

THROUGHOUT THE DEVELOPING PROCESS JUAN MOVED ON A VERY ERRATIC COURSE WITH RECONNAISSANCE AIRCRAFT REPORTING THE CENTER TO BE A WIDE AREA OF LIGHT AND VARIABLE WINDS. AS THE STORM BECAME BETTER ORGANIZED IT BEGAN MOVING TOWARD THE NORTHEAST AROUND 10 KNOTS IN THE EARLY MORNING HOURS OF 27 OCTOBER. THAT AFTERNOON JUAN TURNED TOWARD THE NORTHWEST AT 15 KNOTS WITH AIRCRAFT REPORTS SHOWING

IT HAD ATTAINED MINIMAL HURRICANE STRENGTH.

JUAN'S FORWARD SPEED DROPPED TO LESS THAN 5 KNOTS BY THE MORNING OF 28 OCTOBER AND IT MADE A CYCLONIC LOOP OFF THE CENTRAL LOUISIANA COAST FOR THE NEXT 24 HOURS WHILE UNDER THE INFLUENCE OF A LARGE SCALE UPPER LEVEL LOW PRESSURE AREA. THE HURRICANE FINALLY MADE LANDFALL NEAR MORGAN CITY, LOUISIANA ON THE MORNING OF 29 OCTOBER. THE FOLLOWING DAY JUAN MADE A SECOND CYCLONIC LOOP AROUND LAFAYETTE, LOUISIANA BEFORE EMERGING OVER VERMILION BAY ON 30 OCTOBER. WHILE INLAND, JUAN WAS DOWNGRADED TO A TROPICAL STORM WITH GALE FORCE WINDS CONFINED TO THE WATERS OF THE NORTHERN GULF OF MEXICO.

AFTER MOVING OFFSHORE THE STORM BECAME A LITTLE BETTER ORGANIZED AS IT SKIRTED THE LOUISIANA COAST, THEN MOVED ACROSS THE MOUTH OF THE MISSISSIPPI RIVER NEAR BURWOOD, LOUISIANA IN THE PREDAWN HOURS OF 31 OCTOBER. HEADING ON A NORTHEASTERLY COURSE NEAR 15 KNOTS, JUAN MAKE A SECOND LANDFALL JUST WEST OF PENSACOLA, FLORIDA AT MIDDAY. THEREAFTER, JUAN TURNED NORTHWARD AND GRADUALLY LOST STRENGTH BEFORE FINALLY BECOMING CLASSIFIED AS AN EXTRATROPICAL STORM OVER CENTRAL TENNESSEE ON 1 NOVEMBER.

METEOROLOGICAL STATISTICS

THE MAXIMUM SUSTAINED WINDS REPORTED BY RECONNAISSANCE AIRCRAFT WAS 75 KNOTS IN THE EARLY MORNING HOURS OF 28 OCTOBER. DURING THE SAME DAY JUAN'S LOWEST PRESSURE (971 MB) WAS OBSERVED BY AIRCRAFT. WINDS DECREASED AND PRESSURES ROSE ON 29 OCTOBER AS MOST OF THE HURRICANE'S CIRCULATION MOVED OVER LAND.

COASTAL STATIONS FROM SOUTHEAST TEXAS TO THE FLORIDA PANHANDLE HAD GALE FORCE WINDS AT TIMES DURING THE FIVE DAY PERIOD JUAN LINGERED

IN THE NORTH CENTRAL GULF OF MEXICO. THE HIGHEST GUST OF WIND OBSERVED AT THE SURFACE WAS 55 KNOTS AT PENSACOLA, FLORIDA. THIS OCCURRED AROUND MIDDAY ON 31 OCTOBER ABOUT THE TIME JUAN WAS MAKING LANDFALL. THE ONLY OBSERVED HURRICANE FORCE WINDS AT THE SURFACE WERE FROM ANEMOMETERS ON OIL RIGS OFF THE LOUISIANA COAST. ONE RIG REPORTED SUSTAINED WINDS OF 75 TO 80 KNOTS WITH GUSTS TO 95 KNOTS.

TIDES WERE GENERALLY 3 TO 6 FEET ABOVE NORMAL ALONG THE NORTHERN GULF COAST FROM THE UPPER TEXAS COAST TO NORTHWEST FLORIDA. EAST OF THE MOUTH OF THE MISSISSIPPI RIVER THESE TIDES PERSISTED MOST OF THE FIVE DAY PERIOD. ALONG THE WESTERN LOUISIANA AND UPPER TEXAS COASTS TIDES DROPPED BELOW NORMAL DURING THE LATTER PORTIONS OF THIS FIVE DAY PERIOD BECAUSE OF THE STRONG OFFSHORE WINDS.

RAINFALL WAS EXCESSIVE FROM SOUTHEAST TEXAS TO SOUTHERN ALABAMA DUE TO THE LENGTH OF TIME THE STORM'S CIRCULATION REMAINED OVER THAT AREA. IN FACT, MOST OF THE DAMAGE WAS DUE TO A COMBINATION OF HIGH WATER FLOODING AND GULF HIGH TIDES. STORM RAINFALL TOTALS RANGED FROM 5 TO 10 INCHES WITH SOME LOCAL AMOUNTS OF 10 TO 15 INCHES OVER SOUTHERN LOUISIANA.

A FEW SMALL TORNADOES WERE REPORTED ALONG THE FRINGES OF JUAN'S CIRCULATION BUT THERE WAS NO SIGNIFICANT DAMAGE.

CASUALTY AND DAMAGE STATISTICS

A TOTAL OF 12 DEATHS WERE ATTRIBUTED TO THE STORM. ELEVEN WERE IN LOUISIANA AND 1 IN A BOATING ACCIDENT OFF THE TEXAS COAST. MOST OF THE DEATHS IN LOUISIANA WERE DUE TO DROWNING. THERE WERE 1,357 INJURIES REPORTED BY FEMA, HOWEVER NEARLY ALL OF THEM WERE MINOR. EARLY DAMAGE ESTIMATES WERE BETWEEN ONE AND ONE AND A HALF BILLION DOLLARS, WITH MOST OF IT RELATED TO FLOODING IN SOUTHERN LOUISIANA.

THOUSANDS OF HOMES WERE FLOODED IN SOUTHEASTERN LOUISIANA, MAINLY AROUND LAKE PONTCHARTRAIN. THE OIL INDUSTRY REPORTED CONSIDERABLE DAMAGE TO OFFSHORE OIL RIGS CAUSED BY SWELLS OF 25 TO 35 FEET WITH TWO RIGS OVERTURNING. NINE OF JUAN'S 12 DEATHS WERE ATTRIBUTED TO THE TOPPLED RIGS OR TO BOATS LOST AT SEA TRANSPORTING OIL WORKERS. THE HIGH WINDS AND ROUGH SEAS PRECEDING THE DEVELOPMENT OF JUAN, DISCUSSED AT THE BEGINNING OF THIS REPORT, MADE EVACUATION OF THE RIGS VERY DIFFICULT AND CONTRIBUTED TO THE LOSS OF LIVES. THERE WAS EXTENSIVE LOSS OF CROPS AND LIVESTOCK IN SOUTHERN LOUISIANA DUE TO FLOODING. ALL OF THESE LOSSES ARE INCLUDED IN THE TOTAL STORM DAMAGE.

FORECASTS AND WARNINGS

THE LARGE SCALE UPPER LEVEL LOW PRESSURE AREA AROUND THE STORM PRODUCED SHIFTING STEERING CURRENTS WHICH MADE FORECASTING THE MOTION EXTREMELY DIFFICULT. THE UPPER LEVEL CIRCULATION ALSO CONTRIBUTED TO THE TWO CYCLONIC LOOPS JUAN MADE ALONG THE COAST OF LOUISIANA. THE ERRATIC MOTION OF THE STORM AND LARGE SIZE OF THE CIRCULATION REQUIRED WARNINGS OVER MUCH THE U.S GULF COAST. MOST OF LOUISIANA WAS UNDER A HURRICANE WARNING FOR TWO DAYS. A SUMMARY OF THE WARNINGS IS INCLUDED IN THIS REPORT.

THE ATTACHED TABLE SUMMARIZING THE 72-HOUR PROBABLITIES OF JUAN SHOWS THAT HURRICANE WARNINGS WERE ISSUED WHEN THE 72-HOUR PROBABILITY WAS GREATER THAN 20 PERCENT.

GBC