

= 1988 Atlantic hurricane season =

The 1988 Atlantic hurricane season was a moderately active season that proved costly and deadly , with 15 tropical cyclones directly affecting land . The season officially began on June 1 , 1988 , and lasted until November 30 , 1988 , although activity began on May 30 when a tropical depression developed in the Caribbean Sea . The June through November dates conventionally delimit the period of each year when most tropical cyclones form in the Atlantic basin . The first cyclone to attain tropical storm status was Alberto on August 8 , nearly a month later than usual . The final storm of the year , Tropical Storm Keith , became extratropical on November 24 .

The season produced 19 tropical depressions of which 12 attained tropical storm status . One tropical storm was operationally classified as a tropical depression but was reclassified in post @-@ analysis . Five tropical cyclones reached hurricane status of which three became major hurricanes reaching Category 3 on the Saffir @-@ Simpson Hurricane Scale .

The most notable cyclone of the season was Hurricane Gilbert , which at the time was the strongest Atlantic hurricane on record . The hurricane tracked through the Caribbean Sea and the Gulf of Mexico and caused devastation in Mexico and many island nations , particularly Jamaica . Its passage caused US \$ 5 billion in damage (1988 USD ; \$ 10 billion 2016 USD) and more than 300 deaths , mostly in Mexico . Hurricane Joan , striking Nicaragua as a Category 4 hurricane , caused about US \$ 2 billion in damage (1988 USD ; \$ 4 billion 2016 USD) and more than 200 deaths . The hurricane crossed into the eastern Pacific Ocean and was reclassified as Tropical Storm Miriam .

= = Season summary = =

= = = Preseason forecasts = = =

Forecasts of hurricane activity are issued before each hurricane season by noted hurricane experts such as Dr. William M. Gray and his associates at Colorado State University . A normal season as defined by NOAA has six to fourteen named storms of which four to eight reach hurricane strength and one to three become major hurricanes . The June 1988 forecast was that eleven storms would form and that seven would reach hurricane status . The forecast did not specify how many hurricanes would reach major hurricane status .

= = = Season activity = = =

The Atlantic hurricane season officially began on June 1 , but activity in 1988 began two days earlier with the formation of Tropical Depression One on May 30 . It was an above average season in which 19 tropical depressions formed . Twelve depressions attained tropical storm status , and five of these attained hurricane status . For the first time in 27 years three hurricanes reached major hurricane status . Four hurricanes and three tropical storms made landfall during the season and caused 550 deaths and \$ 7 billion in damage (1988 USD) . The last storm of the season , Tropical Storm Keith , dissipated on November 24 , only 6 days before the official end of the season on November 30 .

The activity in the first two months of the season was limited because of strong wind shear from an upper tropospheric flow . Although vigorous tropical waves moved off the coast of Africa , most of them quickly diminished in intensity as they crossed the tropical Atlantic Ocean . As a result , no tropical depressions formed in June or July . Decreased wind shear in August allowed tropical waves to develop into tropical cyclones . The official storm track forecast errors were 30 to 40 percent lower than the average for the previous 10 years . The 24- , 48- , and 72 @-@ hour forecasts were the most accurate in more than 18 years and were also more accurate than in each subsequent season until 1996 .

The season 's activity was reflected with a cumulative accumulated cyclone energy (ACE) rating of 103 , which is classified as " near normal " . ACE is , broadly speaking , a measure of the power of

the hurricane multiplied by the length of time it existed , so storms that last a long time , as well as particularly strong hurricanes , have high ACEs . ACE is calculated for all named storms at 6 @-@ hourly intervals , when a system exceeds 34 knots (39 miles per hour ; 63 kilometres per hour) .

= = Storms = =

Timeline of tropical activity in 1988 Atlantic hurricane season

= = Tropical Depression One = = =

The first tropical depression of the season formed on May 30 in the northwest Caribbean Sea . The system encountered unfavorable conditions as it moved northward toward Cuba , and a reconnaissance airplane sent to investigate it could not find a well @-@ defined center . The depression remained weak and degenerated on June 2 into an open trough of low pressure in the Florida Straits .

Rainfall from the depression and its precursor peaked at 40 @.@ 35 in (1025 mm) , including a daily peak of 34 @.@ 13 in (867 mm) . The rainfall most affected the province of Cienfuegos , though the provinces of Villa Clara , Sancti Spíritus , Ciego de Ávila , and Camagüey were also impacted . A tornado in the city of Camagüey destroyed five Soviet planes and multiple buildings . Flooding prompted officials to use rescue crews , helicopters , and amphibious vehicles to evacuate 65 @,@ 000 residents in low @-@ lying areas to higher grounds . The storm left many without power and communications , severely damaged the country 's transportation infrastructure , and destroyed six bridges . Flooding from the depression damaged 1 @,@ 000 houses and destroyed 200 homes in Camagüey Province alone . Throughout Cuba , the depression affected about 90 @,@ 000 people , injuring dozens and killing a total of 37 people , including three who died from electrocution . In Florida , the depression produced light rain , including 3 @.@ 18 in (81 mm) at Pompano Beach .

= = Tropical Storm Alberto = = =

The season 's first named storm originated on August 4 within a weak trough of low pressure that formed off the coast of South Carolina . The next day a low level circulation was detected by satellite , indicating that a tropical depression was forming . By August 6 the storm was designated the second tropical depression of the season . An approaching weak frontal trough pushed the depression northeastward and enhanced its upper level outflow . On August 7 the system was designated Tropical Storm Alberto while located just south of Nantucket , Massachusetts . The storm accelerated northeastward at 29 mph (47 km / h) and struck western Nova Scotia that evening with little impact . On August 8 Alberto became extratropical over the cold waters of the Gulf of Saint Lawrence . Shortly thereafter it dissipated just north of Newfoundland .

In Maine , Alberto produced light rainfall , reaching 2 @.@ 4 inches (60 mm) near Millinocket . The storm produced peak wind gusts of 48 mph (78 km / h) at Yarmouth , Nova Scotia . Rainfall reached 1 @.@ 78 inches (45 @.@ 1 mm) in Saint John , New Brunswick , most of which fell in a short amount of time . The rainfall caused localized flooding , which briefly closed some streets . The extratropical remnants of Alberto also produced light rain and some clouds along western Newfoundland .

= = Tropical Storm Beryl = = =

The third tropical depression of the season formed on August 7 from a surface low over southeastern Louisiana . The slow moving system organized as it drifted toward the mouth of the Mississippi River . It soon had enough convective organization for the National Hurricane Center (NHC) to issue an initial advisory on Tropical Depression Three . By August 8 surface winds increased enough to issue tropical storm warnings for Louisiana to the Florida Panhandle . Over the

open Gulf , Beryl produced sustained winds of minimal tropical storm force and tropical storm force gusts over coastal Louisiana , Mississippi , and Alabama . Excessive rain fell along the central Gulf Coast , including local amounts of 16 in (410 mm) at Dauphin Island , Alabama .

Maintaining a well @-@ structured outflow , Beryl 's circulation on August 9 moved over warm water , where conditions were favorable for further intensification . However , a front approached from the northwest and reversed the storm 's course into southeastern Louisiana . The next morning Beryl had weakened to a tropical depression as it moved over the Bayou Teche . Heavy downpours from system 's remnants brought more than 12 in (300 mm) of rain to parts of eastern Texas . Overall damage from the storm was light , and only one known death was attributed to the storm .

= = = Tropical Depression Four = = =

On August 12 a westward @-@ moving tropical wave developed into Tropical Depression Four near the southern Bahamas . The depression tracked north @-@ northwest along Florida 's coast and made landfall near Jacksonville , Florida , the next day . The system spawned gusty winds and thunderstorms along the coasts of Florida and Georgia but caused little damage . The storm moved over south Georgia and the central Gulf Coast while dropping up to 7 in (178 mm) of rain on the Southeast . According to the National Weather Service , winds in some squalls to the north and east of the center reached up to 50 mph (80 km / h) . The system finally dissipated as it reemerged over water near the mouth of the Mississippi .

Early predictions from hurricane forecasters said that the depression would strengthen into the season 's third tropical storm . Because of unfavorable upper level conditions and interaction with Bahama islands , the system lost its well defined center as it moved towards Florida 's east coast .

= = = Tropical Depression Five = = =

A tropical wave in the far eastern Atlantic developed into the fifth tropical depression on August 20 . The storm drifted north @-@ northwest of the Cape Verde islands for the next three days with little change in strength . Forecasters were concerned because the depression formed in the breeding ground where other powerful East Coast hurricanes have started . Though the storm was still very weak , they initially predicted it would strengthen .

By August 24 the depression 's forward speed had increased to 15 mph (24 km / h) as its movement turned west . Cool ocean temperatures weakened the system and diminished its prospects for restrengthening , and on August 26 Tropical Depression Five degenerated into a tropical wave . The remnants redeveloped on August 30 about 180 miles (290 km) southeast of North Carolina , and the Washington office of the National Weather Service continued to track the system as a gale center until it merged with a front off the East Coast on September 1 .

= = = Tropical Depression Six = = =

Tropical Depression Six developed from a tropical wave that moved off the northwest African coast on August 12 . The system crossed the tropical Atlantic as a wave until it began organizing near 55 ° W on August 19 . The next day this system was designated a tropical depression while it approached the Windward Islands . After crossing the islands , the depression continued westward into the central Caribbean and encountered less @-@ favorable conditions . Though poorly organized on August 21 , the depression was expected to strengthen into a tropical storm over the western Caribbean 's warmer waters . Nevertheless , it was downgraded to a tropical wave at 80 ° W near the island of Jamaica on August 23 . The disturbance moved over Central America with minimal convection but redeveloped into Hurricane Kristy once it reached the eastern Pacific . The system 's main effect on land was squally weather on the Windward Islands .

= = = Tropical Storm Chris = = =

Chris formed from a strong tropical wave that moved off the west coast of Africa on August 15 . By August 21 convection in the northern part of the wave detached and organized into Tropical Depression Seven . The storm tracked westward along the southern periphery of a subtropical high pressure ridge over the mid @-@ Atlantic . For the next seven days , surface and reconnaissance observations found little evidence that the storm was strengthening . As a result , it remained a tropical depression as it moved across portions of the Lesser and Greater Antilles as well as the Bahamas .

The depression passed south of Puerto Rico on August 24 and dumped more than 14 in (360 mm) of rain on parts of the island . Three deaths in Puerto Rico were attributed to the weather . On August 28 the storm was upgraded to Tropical Storm Chris as it traveled northward just offshore of Florida . It made landfall near Savannah , Georgia , bringing light wind and rain damage to the area . Weakening to a depression , Chris poured heavy rains on South Carolina , where it merged with a cold front and became extratropical . The low accelerated over the Eastern Seaboard through Nova Scotia and finally dissipated on August 30 . Heavy thunderstorms spawned a tornado in South Carolina that resulted in another death .

= = = Hurricane Debby = = =

Debby formed from the southern part of a tropical wave that became Tropical Storm Chris . In the mid @-@ tropical Atlantic , the northern area of convection detached and became Tropical Depression Seven . The southern portion continued moving westward as a disorganized area of showers . The system did not develop until the low @-@ level center emerged from the Yucatán into the Bay of Campeche on August 31 . It is estimated that the storm became Tropical Depression Eight just offshore at around 12 p.m. local time .

Drifting west @-@ northwest over the Gulf of Mexico , the depression organized and reached tropical storm @-@ strength early on September 2 . Later that day , based on observations from aircraft reconnaissance , Debby was upgraded to a hurricane . At peak intensity , the hurricane 's center was just 30 mi (48 km) from the coast . With little change in intensity , Debby made landfall near Tuxpan , Veracruz , six hours later . The storm brought high winds , inland flooding , and mudslides and caused 10 deaths .

Debby weakened considerably over the Sierra Madre Oriental mountains , although the remnants continued moving across Mexico . The tight center tracked towards the Pacific coast and reemerged near Manzanillo on September 5 . Upon entering the Eastern Pacific , the system became Tropical Depression Seventeen @-@ E before dissipating in the Gulf of California on September 8 .

= = = Tropical Storm Ernesto = = =

On September 2 a cluster of thunderstorms associated with a northwestward @-@ moving tropical wave developed a surface low near Bermuda . Though the surface low remained poorly defined and separate from the convection , the system became a tropical depression on September 3 . Under the influence of southwesterlies , the depression accelerated northeastward at 50 mph (80 km / h) . Late on September 3 it was upgraded to Tropical Storm Ernesto . The storm continued to strengthen as it lost tropical characteristics . A large extratropical storm over the North Atlantic absorbed Ernesto on September 5 .

Throughout its life , Ernesto remained at sea and brought strong winds to the open waters of the ocean . The only land area affected by the storm was in the Azores , where it brought near storm @-@ force winds to Flores Island . No damage or casualties were reported .

= = = Tropical Depression Ten = = =

A broad low pressure area formed in the western Gulf of Mexico on September 2 and quickly developed through the next day . By September 3 convection was organized enough to declare the system a tropical depression about 160 mi (260 km) west @-@ southwest of Morgan City ,

Louisiana . Forecasters issued tropical storm warnings for the coast from Cameron , Louisiana , to Apalachicola , Florida , while the storm moved rapidly northeastward at 15 to 20 mph (32 km / h) . However , the depression degenerated a few hours later when it merged with the cold front that had caused its acceleration . Oil rigs in the Gulf of Mexico reported winds gusts to 40 mph (64 km / h) , and moderate to heavy rains drenched large portions of southeast Texas and Louisiana . The wave dampened over the next 24 hours and brought heavy rain to the rest of the southeast , including a maximum of 8 @. @ 4 in (210 mm) in Biloxi , Mississippi . No major damage was reported .

= = = Unnamed Tropical Storm = = =

A well @-@ organized disturbance moved off the African coast on September 6 and rapidly developed into Tropical Depression Eleven . The NHC began issuing advisories on September 8 while it was 350 mi (560 km) northeast of Cape Verde . An after @-@ the @-@ fact review of satellite and ship reports indicated that the depression reached tropical storm @-@ strength on September 7 . However , because of its extreme eastern track , the storm 's observational track did not include this information .

For three days a large trough of low pressure northwest of the system steered it north @-@ northwest towards cooler waters . Moderate to heavy rain was reported along the west coast of Africa , but no damage was reported . The system eventually weakened and merged with the low pressure trough . This unnamed storm was later added to the list of tropical storms in the annual summary for the Atlantic hurricane season .

= = = Hurricane Florence = = =

A cloud band accompanying a cold front exited the coast of Texas into the Gulf of Mexico on September 4 . The band split into two over the central Gulf when the southern portion stalled and the northern portion developed into a frontal wave that tracked northeastward . Convection over the southern portion increased and wrapped around the center of the cloud band . On September 7 the system formed a surface circulation , and tropical depression advisories began that day .

The depression drifted eastward under the influence of the dissipating frontal trough and intensified into Tropical Storm Florence , as confirmed by Hurricane Hunters . The storm turned northward on September 9 and accelerated toward the northern Gulf Coast under the influence of a mid- to upper @-@ level trough . Florence became a hurricane just hours before landfall on the western Mississippi Delta . The storm rapidly weakened over southeastern Louisiana and lost all its deep convection as it passed over the New Orleans area . Florence became a depression on September 10 near Baton Rouge and dissipated the next day over northeast Texas .

Early in its duration the system dropped moderate amounts of rainfall across the Yucatán Peninsula . Upon striking Louisiana , storm surge water levels rose moderately above normal just east of where the center moved ashore . Gusty winds caused power outages to more than 100 @, @ 000 people . In Alabama one man died while trying to secure his boat . Rainfall from the hurricane caused severe river flooding in portions of the Florida Panhandle in an area already severely affected by heavy rainfall , and the flooding damaged or destroyed dozens of houses in Santa Rosa County .

= = = Hurricane Gilbert = = =

The 12th tropical depression formed just east of the Lesser Antilles on September 8 . As it moved west @-@ northwest , it became Tropical Storm Gilbert over the islands on September 9 . The tropical storm turned west and rapidly intensified to a major hurricane on September 11 . Gilbert continued to strengthen as it brushed the southern coast of Hispaniola . It passed directly over Jamaica as a Category 3 hurricane and brought torrential rains to the island 's mountainous areas . When the center reemerged over water , Gilbert rapidly intensified again . On September 13 the central pressure dropped 72 millibars (2 @. @ 1 inHg) , the fastest deepening of an Atlantic

hurricane on record until 2005 's Hurricane Wilma . Gilbert 's pressure of 888 millibars (26 @. @ 2 inHg) at the time was the lowest sea level pressure ever recorded in the Western Hemisphere .

Gilbert weakened slightly before landfall on the Yucatán Peninsula , although it struck at Category 5 strength . As the eye moved over land , the storm rapidly lost strength , reemerging on September 15 in the Gulf of Mexico as a Category 2 hurricane . Hurricane Gilbert continued its northwest track and restrengthened to a minimal Category 4 hurricane . On September 16 , Gilbert made its final landfall in northeast Mexico near the town of La Pesca with maximum sustained winds of 125 mph (201 km / h) . The center passed south of Monterrey , Mexico , on September 17 and brought heavy flooding to the city . Gilbert 's remnants turned north and eventually merged with a developing frontal low pressure system over Missouri .

Hurricane Gilbert was the most intense hurricane ever observed in the Atlantic basin until Hurricane Wilma broke this record in 2005 . The storm caused \$ 5 billion (1988 USD) in damage across the Caribbean and into Central America . Gilbert was the first hurricane to make landfall in Jamaica since Hurricane Charlie in 1951 . Until 2007 's Hurricane Dean , it was also the most recent storm to make landfall as a Category 5 hurricane in Mexico . The death toll from Gilbert was reported to be 318 people , mostly from Mexico .

= = = Hurricane Helene = = =

A tropical wave with deeply organized convection crossed the coast of Africa on September 15 . The system was forced west due to a strong ridge in the eastern Atlantic . On September 19 at 1800 UTC , the system was upgraded to Tropical Depression Fourteen . By 0600 UTC on September 20 , the depression was strengthened , and was upgraded to Tropical Storm Helene . Helene began to turn to the northwest on September 21 due to a major trough in the eastern Atlantic . Later on September 21 , Helene intensified into a hurricane . Favorable conditions allowed the storm to continue strengthening , and on September 22 , Helene became a major hurricane . Late on the following day , Helene attained its peak intensity maximum sustained winds were at 145 mph (233 km / h) and the minimum pressure of 938 mbar (27 @. @ 7 inHg) .

After reaching peak intensity , Helene weakened as it tracked generally northward through the open Atlantic . By early on September 29 , Helene briefly restrengthened into a Category 2 hurricane and reached a secondary peak of 105 mph (169 km / h) . However , later that day , Helene weakened back to a Category 1 hurricane while accelerating to the northeast . At 1200 UTC on September 30 , Helene transitioned into an extratropical cyclone while centered well south of Iceland . The precursor tropical wave produced thunderstorms and gusty winds ranging between 23 and 34 mph (37 and 55 km / h) in Cape Verde on September 17 .

= = = Tropical Depression Fifteen = = =

While Hurricane Helene was spinning in the central Atlantic , a tropical wave that moved off the coast of Africa in late September rapidly organized . On September 27 the storm became the fifteenth tropical depression of the season while it was about 265 mi (426 km) south @- @ southeast of Cape Verde . The depression tracked westward at 15 to 20 mph (32 km / h) but weakened rapidly . The next day it was downgraded to a tropical wave while still in the far eastern Atlantic , and never reformed in the Atlantic . Aside from a brief threat to the Cape Verde islands , the system remained far from any landmasses throughout its life .

= = = Tropical Storm Isaac = = =

Isaac moved off the coast of Africa on September 23 . It traveled westward at a low latitude along the Intertropical Convergence Zone (or ITCZ) , and its convection gradually grew more organized . On September 29 it was identified as Tropical Depression Sixteen about 900 mi (1 @, @ 400 km) southeast of Barbados . The westward path of the storm shifted two degrees northward , possibly as a result of the formation of a new center . On September 30 the depression was upgraded when an

Air Force reconnaissance plane discovered tropical storm @-@ force winds . Westerly vertical wind shear prevented deep convection at the center of the storm . As Isaac approached the islands , northern parts of the Lesser Antilles were issued tropical storm warnings . Nevertheless , the storm lasted only a short time in the shearing environment . Isaac was downgraded to a depression on October 1 and completely dissipated shortly thereafter . The remnants of Isaac eventually regenerated in the eastern Pacific Ocean basin as Tropical Depression Twenty @-@ E.

As a tropical cyclone , Isaac did not significantly affect land . However , the remnants dropped heavy rainfall across Trinidad and Tobago , causing flooding and mudslides that injured 20 people and left at least 30 homeless . Flash flooding in Morvant killed two people . Across the country , the storm damaged roads and bridges .

= = = Hurricane Joan = = =

On October 10 the 17th tropical depression of the season organized from a disturbance in the ITCZ . For the next two days the system traveled northwest while it strengthened into Tropical Storm Joan . After passing through the southern Lesser Antilles , Joan traveled westward along the South American coast as a minimal tropical storm . It crossed the Guajira Peninsula on October 17 and quickly attained hurricane strength just 30 mi (48 km) from the coast . Hurricane Joan strengthened into a major hurricane on October 19 while drifting westward . The hurricane executed a tight cyclonic loop in which it weakened greatly but rapidly strengthened upon resuming its westward track . Joan reached its peak intensity just before making landfall near Bluefields , Nicaragua , on October 22 as a Category 4 hurricane . Joan at the time was the southernmost Category 4 hurricane ever recorded , but this record has since been broken by Hurricane Ivan . Joan remained well organized as it crossed Nicaragua and emerged in the eastern Pacific Ocean basin as Tropical Storm Miriam . Miriam gradually weakened until dissipating on November 2 .

Hurricane Joan killed 148 people in Nicaragua and 68 others in affected nations . The hurricane damage in Nicaragua amounted to half of the \$ 2 billion (1988 USD ; \$ 4 billion 2016 USD) total . Joan also brought heavy rainfall and mudslides to countries along the extreme southern Caribbean . Its track along the northern coast of South America was very rare ; Joan was one of only a few Atlantic tropical cyclones to move in this way . Joan was also the first tropical cyclone to cross from the Atlantic basin since Hurricane Greta of 1978 .

= = = Tropical Depression Eighteen = = =

A westward @-@ moving tropical wave that left the coast of Africa in early October tracked closely behind Hurricane Joan through the southern Caribbean . In an unusual occurrence the disturbance developed into the 18th tropical depression about 500 mi (800 km) behind the powerful hurricane . An Air Force reconnaissance check of tropical weather on October 19 spotted the depression near Colombia 's Guajira Peninsula . Hurricane Joan 's small size allowed the depression to remain out @-@ of @-@ reach as it developed . However , the outflow of the hurricane sheared the depression and sapped its energy . The system gradually dissipated on October 21 while Joan was experiencing rapid strengthening just before its arrival on the coast of Nicaragua . The depression brought heavy rain to the Netherlands Antilles . News reports blamed Tropical Depression Eighteen and other tropical systems for bringing swarms of pink locusts from Africa to Trinidad and other Caribbean nations .

= = = Tropical Storm Keith = = =

The last storm of the season formed from a tropical wave on November 17 to the south of Haiti . It moved westward through the Caribbean Sea and became organized enough to attain tropical storm status on November 20 . Keith rapidly organized and peaked with winds of 70 mph (110 km / h) before making landfall on the northeastern portion of the Yucatán Peninsula on November 21 . An upper level trough forced it to the northeast , where upper @-@ level shear and cooler drier air

weakened it to minimal storm strength in a pattern typical for November . Keith restrengthened over the southeastern Gulf of Mexico and struck near Sarasota , Florida , on November 23 . After crossing the state , it became extratropical on November 24 near Bermuda and became an intense extratropical system over the Atlantic with sustained winds of minimal hurricane force .

Early in its duration Keith produced moderate to heavy rainfall in Honduras , Jamaica , and Cuba . Minimal damage was reported in Mexico , still recovering from the devastating effects of Hurricane Gilbert two months earlier . Keith , the last of four named tropical cyclones to hit the United States during the season , produced moderate rainfall , a rough storm surge , and gusty winds across central Florida . Overall damage was widespread but fairly minor , totaling about \$ 7 @. @ 3 million (1988 USD , \$ 12 @. @ 7 million 2007 USD) . Damage near the coast occurred mainly from storm surge and beach erosion , while damage further inland was limited to flooding and downed trees and power lines . No fatalities were reported .

= = Storm names = =

The following names were used for named storms that formed in the north Atlantic in 1988 . The names not retired from this list were used again in the 1994 season . This is the same list used for the 1982 season . Storms were named Gilbert , Isaac , Joan , and Keith for the first time in 1988 . Florence and Helene were not used in 1982 but had been used in previous lists . Names that were not assigned are marked in gray .

= = = Retirement = = =

The World Meteorological Organization retired two names in the spring of 1989 : Gilbert and Joan . They were replaced by Gordon and Joyce in the 1994 season .

= = Season impact = =