SECTION VI

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The 1959 Typhoon Season will long be remembered as one of the most destructive in history. Of a total of 17 typhoons during the Season, 13 hit heavily populated areas, each leaving behind a trail of death and destruction.

Reports from Okinawa, Japan, the Republic of Korea, Taiwan, and the Philippine Islands place the total known dead at approximately 7,570 persons, the number of missing at 1,700, and the number of injured at more than 60,000. Millions of others were left homeless.

The four typhoons which caused the greatest destruction, and the areas most seriously affected were: BILLIE (Taiwan and the Ryukyu Islands), GEORGIA (Japan), SARAH (Okinawa, Korea and Japan) and VERA (Japan).

Information regarding the damage and loss of life caused by each destructive typhoon is presented in the following paragraphs. It is emphasized that complete, detailed records of the destructive effects of typhoons are not maintained by JTWC. The greater part of the data regarding damage has been obtained from articles which appeared in the "Pacific Stars and Stripes" and in the "Guam Daily News."

The destructive typhoons of 1959 were BILLIE, ELLEN, GEORGIA, IRIS, JOAN, LOUISE, SARAH, VERA, CHARLOTTE, EMMA, FREDA, GILDA and HARRIET.

1. BILLIE. Areas Affected: Taiwan, Ryukyu Islands, Southern Japan.

Taiwan: BILLIE left one dead, more than 100 persons homeless, and about $500,000 worth of property damage in Taiwan's eastern areas. Also, one-third of Taipei was flooded, leaving 10,000 persons homeless in the city.

The following is a description of the damage sustained in the capital city:

Extensive areas of Taipei were flooded long after the typhoon struck.

Hundreds of shanty-type dwellings were destroyed.

Muddy waters invaded thousands of more substantial homes in outlying areas.

Numerous persons were forced to hurriedly evacuate during the night.

Parts of Chuncshan road, the city's main thoroughfare, were submerged for several days.

Ryukyu Islands: The typhoon lashed Ishigaki, in the southern Ryukyu chain, leaving 16 homes destroyed, 49 partially destroyed, crops seriously damaged and four vessels missing.

Southern Japan: The dead from a week of torrential rains on the fringes of the typhoon rose to 45, with 75 injured, 16 missing and more than 65,000 homes destroyed, damaged or flooded.

2. ELLEN. Area Affected: Southern Japan.

Southern Japan: Typhoon ELLEN battered Southern Japan

leaving at least 11 persons killed, 11 injured, and more than 4,000 homes flooded. Heavy flooding and wind damage on the southern islands of Kyushu were reported.

Several mountain areas on Kyushu reported as much as 35 inches of rainfall. Also, thousands of acres of rice paddies were flooded in parts of Kyushu and Shikoku and many roads were washed away or inundated.

3. GEORGIA. Area Affected: Central Japan.

Central Japan: Typhoon GEORGIA left a total of 246 dead or missing and 1,031 injured in Japan. Hardest hit on Japan's main island were Nagano with 48 dead and 51 missing, and Yamanashi, with 40 dead and 57 missing, according to the National Rural Police.

The typhoon left more than 50,000 families homeless, tore down miles of communications lines, and washed out bridges and roads. It also caused the worst damage in Japan's history to the railway transport network.

Total damage by ELLEN and GEORGIA is estimated at $50 million, with approximately 205,000 acres of farmland flooded.

4. IRIS. Areas Affected: Philippines, Red China.

Philippines: Typhoon IRIS left death in its wake as it hit the Batan Islands off the northern tip of Luzon. Rough seas churned by the typhoon's winds were blamed for at least two, and possibly three, shipwrecks in the Philippines.

A Philippine inter-island ship, reportedly with over 100 persons aboard sank in storm-tossed waters off Palawan Island

in the central west Philippines. Only 11 survivors were found.

At least five persons were missing when a motorboat capsized in choppy seas off Quezon province in Southern Luzon.

A Chinese fishing vessel reported itself in distress almost directly in the typhoon's path. No immediate help was in sight at the time, and no further word was heard from the vessel.

Red China: China disclosed that typhoon IRIS killed 720 and left 996 missing in a savage sweep through Fukien province.

5. JOAN. Areas Affected: Taiwan, Red China.

Taiwan: Typhoon JOAN smashed Taiwan leaving at least 11 persons killed and $3 million in crop damage. Housing also was hard hit by the storm as JOAN flattened or destroyed 3,308 houses.

The heaviest crop and fruit damage was reported in Pingtung and Nantou counties. Pingtung's ripening banana and papaya crops were blown off trees, and at least 12,000 acres of rice fields were destroyed by the storm. In central Taiwan's rich Nantou banana growing county, 20,000 banana trees worth an estimated $555,000 were destroyed. Cotton, orange and tangerine crops were also dealt severe blows.

Red China: China announced 3 dead and 57 injured from typhoon JOAN.

6. LOUISE. Area Affected: Taiwan.

Taiwan: Typhoon LOUISE slammed through Taiwan leaving 6 dead, 167 injured, and an estimated 6,100 homeless. Heaviest damage was in the Hualien area where it hit with great force.

7. SARAH. Areas Affected: Ryukyu Islands, Korea, Southern Japan.

Ryukyu Islands: Typhoon SARAH left a trail of death and destruction on Miyako Jima Island in the Ryukyus. There were 7 deaths, 88 injuries and more than 6,000 homes were destroyed. SARAH's winds and heavy seas also smashed the fishing pier and 2,200 feet of seawall. Electric power lines were knocked down and the island was left without electric power for a considerable period. All crops were ruined. Damage was estimated at $2 million.

Korea: Korea's worst typhoon in 50 years left 669 dead, 259 missing and thousands injured and homeless. The homeless were officially listed at 782,126 persons.

In addition to the casualty list, the Ministry of Social Affairs reported property losses exceeded $100 million. The loss included 14,000 homes destroyed and 2,800 fishing vessels sunk. Another 2,600 vessels were badly damaged and 313,000 acres of farmland were flooded. Reports from U.S. authorities said military installations in the Pusan and Taegu areas suffered $900,000 damage, with damage to Pusan port exceeding $100,000.

The Pusan area of Korea was hit the hardest. Police reported 25,834 persons homeless from floods and tidal waves. An estimated 15,379 homes were washed away, damaged or destroyed.

Southern Japan: Skirting Kyushu, SARAH flooded communities and sank fishing boats. She killed 24 persons and injured 186. On Honshu and Kyushu 1,188 houses were either demolished or partially destroyed.

8. VERA. Area Affected: Japan.

Japan: Typhoon VERA will long be remembered as Japan's greatest storm disaster. National police said 4,580 persons were confirmed dead with 658 missing. Another 32,285 persons were injured and 1,596,855 left homeless. Damage was estimated in excess of $261 million. Vast areas of crops were ruined, sea walls broken, rivers flooded from accompanying torrential rains, ships beached, houses smashed and communications seriously damaged.

Four days after the disaster thousands were still marooned on rooftops, bodies floated in flooded districts and throngs of refugees were without food and adequate shelter.

VERA dealt a staggering blow to Japan's economy. Food and crops, many ready for harvest, were seriously affected. Railway service in some areas was not expected to resume for at least a month. Damage to roads, bridges and communications was tremendous. More than 200 vessels were sunk.

Some examples of VERA's brutal fury:

In less than three hours on 26 September, VERA turned Nagoya, a modern city, into a complete shambles. The harbor was described as a "sea of dead" and Nagoya lost all function as a harbor.

At Handa, southeast of Nagoya, 300 persons perished when gigantic waves battered the town destroying more than 250 homes.

Sixty persons were buried alive at Kawakami in Nara Prefecture when a landslide crushed 12 houses.

Roofs of 1,000 houses were ripped off a small village in Nagano Prefecture.

Flood waters completely cut off Kuwana City in Mie Prefecture. More than 400 were believed dead or missing.

The 7,142-ton Australian Passenger-freight ship Changsha ran aground at Yokkaichi with 44 passengers aboard. (See page 195).

Along with the immediate effects of the typhoon, there were also numerous long-range problems with which to deal. For example, there was the problem of food. Authorities said that the daily ration of food for the affected citizens had been sharply reduced and hunger was widespread.

Dysentery and other epidemics became rampant in flooded southern Nagoya. Health authorities said that more than 170 dysentery cases were reported in the city's southern district, despite frantic disinfection work. Several cases of gangrene and tetanus were reported in the same district.

Flood waters that surged over the Nagoya harbor in typhoon VERA's wake contaminated drinking water, and water supplies dwindled very rapidly.

Although the majority of homeless victims found refuge in ward offices and schools, the shelter problem became more acute than before.

Refugees streaming toward the shelter of ward offices and schools were drenched by post-typhoon rain. Most of the pitiful handfuls of clothing and bedding they managed to salvage from their flooded homes were water-soaked.

In conclusion, VERA goes down in history as the most destructive of typhoons in the number of lives lost and amount of property damage.

9. CHARLOTTE. Area Affected: Okinawa.

Okinawa: Typhoon CHARLOTTE left 46 persons dead, 24 injured and 1,038 homeless on Okinawa. Also, 275 homes and 11 public buildings were destroyed and 618 homes were damaged.

A total of 24 inches of rain fell on the island. The rain, coupled with high winds, left 75 per cent of the island's rice crops in ruins and destroyed 16 per cent of the sugar cane and other crops.

Damage to military installations on the island amounted to $300,000, which included mostly power lines, water supplies, and other utilities. The only buildings damaged were temporary structures.

Landslides caused by the heavy rains crumpled homes and buried victims trapped inside under tons of dirt and rock in Ogimi, Takazato, Taiho, Tsuda and Hidashi. Parts of Naha were flooded under 5 feet of water as the Asato river overflowed its banks.

10. EMMA. Area Affected: Okinawa.

Okinawa: EMMA left at least 2 persons dead, demolished 46 houses and 4 government buildings, and heavily damaged 108 other buildings on the island of Okinawa. Communications were interrupted and crops were seriously damaged. Naha had its low lying areas flooded and merchandise and shop fixtures suffered heavy damage.

Officials listed eight vessels sunk and eight others missing while unconfirmed reports said 47 ships were sunk or damaged during the storm. Numerous ships at sea were caught by the storm and were forced to radio for help. The 8,713-ton Nikkai Maru sank some 250 miles south of Okinawa; 35 of the 38 crew members were rescued.

11. FREDA. Area Affected: Philippines.

Philippines: Typhoon FREDA left 58 persons dead, missing or injured and more than 7,600 families homeless in the Philippines.

Crop damage was reported heavy in the farming region of southern Luzon. Reports estimated damage to crops and private property to be in the vicinity of $2.5 million.

Torrential rains and strong winds battered Manila, flooding one-third of the capital and downing telephone wires. Two vessels were driven aground and a single-engine plane crashed as a result of FREDA's strong winds.

12. GILDA. Area Affected: Philippines.

Philippines: Typhoon GILDA slashed through the central Philippines leaving at least 23 dead and some 60,000 homeless. Property damage was estimated in excess of $1.5 million.

Authorities in the provinces on GILDA's path reported heavy damage to houses, crops and public work projects. In Samar alone, the first province to be hit by the typhoon, officials reported about $500,000 worth of agricultural plants, houses and communications lines were destroyed.

13. HARRIET. Area Affected: Philippines.

Philippines: Typhoon HARRIET smashed into southeastern Luzon leaving at least five dead and more than 12,000 homeless. The storm also caused considerable damage to public and private property. Communications were disrupted and extensive damage to southern Luzon's citrus, abaca, coconut and rice crops was reported. Unofficial esti-

mates of the damage placed it conservatively at $2.5 million.

On 31 December, HARRIET passed directly over the island of Catanduanes causing severe damage. The following is a vivid description of the passage of the typhoon's eye over the Coast Guard Loran Station located on the island. All wind speeds in the following account are estimated:

"(a) 301630Z: (NE, 75 kts, 993 mb) Heavy driving rains came in squalls. The barometer was falling rapidly. Coconuts and palm leaves were blowing loose and littering the station.

(b) 301800Z: (NE, 90 to 100 kts, 992 mb) Continuous driving rain and winds. Station personnel took refuge in signal-power building. Tar paper commenced tearing off of the signal-power building roof. Water seeping through roof and walls of the building, flooding the cable trenches and floors.

(c) 301900Z: (NNE, 100 to 115 kts, 985 mb) Continuous heavy rain and winds, increasing in intensity. Barometer dropping rapidly.

(d) 302000Z: (NNE, 115 to 130 kts, 984 mb) Continuous heavy rain and winds. Barometer continues to drop.

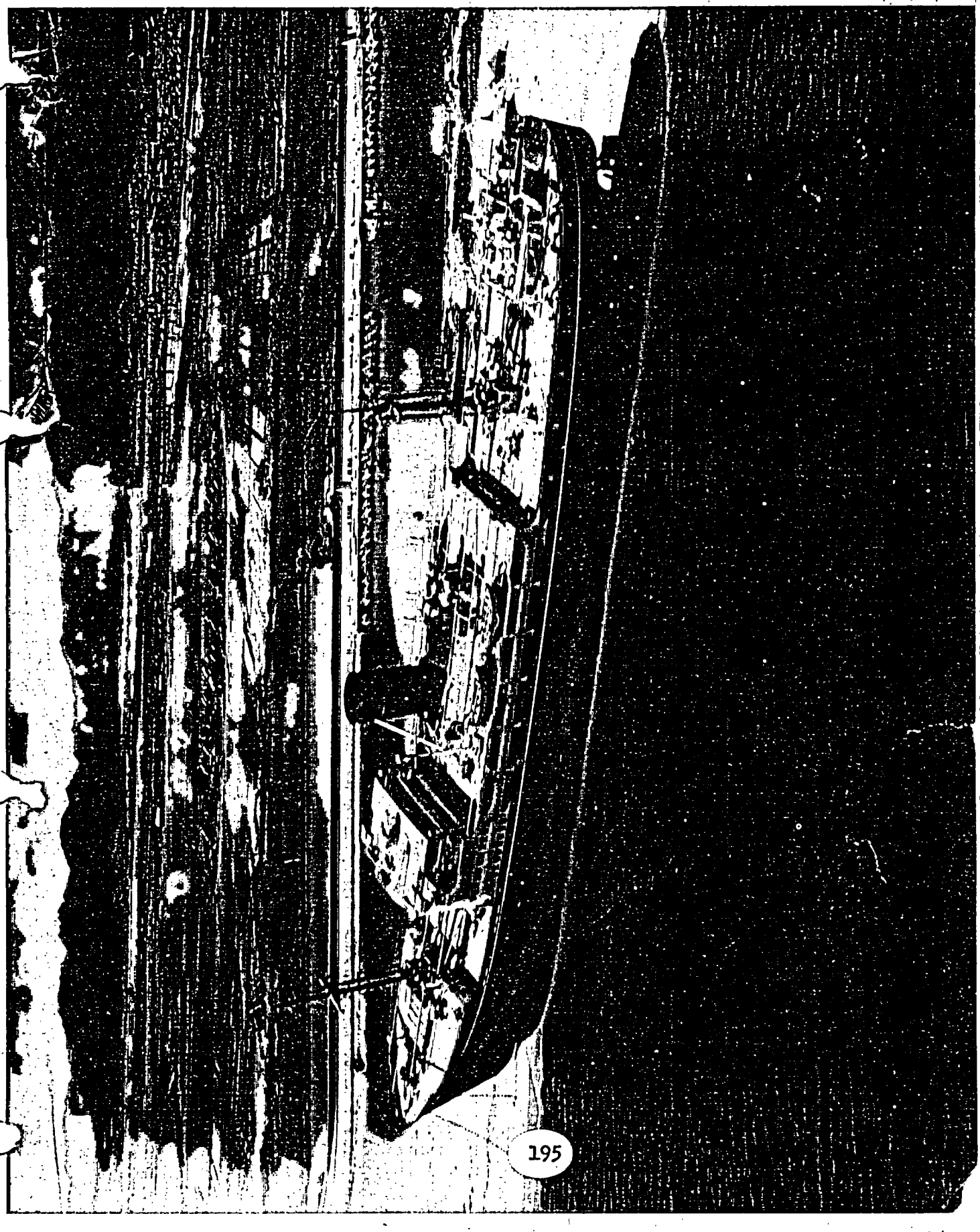
(e) 302100Z: (NNE, 150 to 160 kts, 974 mb) Continuous heavy rain and increasing winds. Barometer dropping rapidly. Signal-power building leaking at this time.

(f) 302125Z: (NE, 160 kts, 967 mb) Secured all electrical power to station. The heavy gusting winds caused pressure waves throughout the interior of the building. The ceiling was lifting and falling and was coming off throughout the building.

(g) 302145Z: (NE, 160 plus kts, 949 mb) This was the last read-

ing of the barometer before it broke. Continuous heavy rain and increasing winds.

(h) 302155Z: The NE corner of the roof was observed to rise approximately one foot from the edge of the building and a few seconds later, the entire roof, including rafters, was blown away. Personnel took shelter under what debris was available to prevent personnel injuries from flying debris and equipment inside the building.

(i) 310100Z: (E, 85 to 100 kts) Heavy rain with winds gusting to 100 kts, slowly diminishing and shifting to SE.

(j) 310130Z: (SE, 75 to 85 kts) All hands returned to lower station to commence clearing quarters of water and sand. Only minor injuries were suffered by two of the personnel. The rest of this day was spent clearing living quarters and galley of water, sand, and broken glass. A hot meal was enjoyed by everyone and sleep came easily on wet and sandy mattresses. By 310800Z, winds had diminished to approximately 30 kts."