

**ESCAP/WMO Typhoon Committee**  
Forty-eight Session  
22- 26 February 2016  
Honolulu, Hawaii  
USA

FOR PARTICIPANTS ONLY  
WRD/TC.48/4.1  
25 January 2016  
ENGLISH ONLY

**REVIEW OF THE 2015 TYPHOON SEASON**

*(submitted by the RSMC Tokyo – Typhoon Center)*

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**Action Proposed**

The Committee is invited to review the 2015 typhoon season.

**APPENDIX A:  
DRAFT TEXT FOR INCLUSION IN THE SESSION REPORT**

**x.x. Summary of typhoon season in TC region**

1. The Committee took note with appreciation of the review of the 2015 typhoon season provided by the RSMC Tokyo as provided in Appendix XX.
2. The Committee noted that in the western North Pacific, 27 named tropical cyclones (TCs) formed in 2015, which is above the 30-year average of 25.6 for the period, 1981-2010. 18 reached typhoon (TY) intensity, and seven named TCs hit the continent.
3. The mean genesis point of the named TCs in 2015 was 13.0°N and 147.2°E, showing deviation to the southeastward from the 30-year average (16.2°N and 137.4°E).
4. Four named TCs formed from January to March. Mekkhala (1501) formed over the sea east of the Yap Islands and damaged the Philippines. Maysak (1504) formed northwest of Pohnpei Island and damaged Micronesia and the Philippines.
5. Five named TCs formed from April to June. Noul (1506) formed east of Yap Island and damaged the Philippines. Kujira (1508) formed west of Paracel Islands and damaged China and Viet Nam. Chan-hom (1509) formed around the Marshall Islands and caused severe damage to China.
6. Three named TCs formed in July. Linfa (1510) formed east of the Philippines and caused severe damage to the Philippines. Nangka (1511) formed over the sea around the Marshall Islands and damaged Japan. Halola (1512) entered the western North Pacific with STS intensity on 12 July and damaged Japan.
7. Four named TC formed in August. Soudelor (1513) formed around the sea east of the Mariana Islands and cause severe damage to China. Goni (1515) formed east of Guam Island and cause severe damage to the Philippines.
8. Five named TCs formed in September. Kilo(1517) entered the western North Pacific with TY intensity on 1 September. Etau (1518) formed west of the Ogasawara Islands and damaged Japan. Vamco (1519) formed over the sea east of Viet Nam and damaged Vietnam and Cambodia. Djuan (1521) formed south-southeast of Okinotorishima Island and damaged China.
9. Six named TCs formed from October to December. Mujigae (1522) formed off the eastern coast of Luzon Island and caused severe damage to the Philippines and China. Koppu (1524) formed west of the Northern Mariana Islands and caused severe damage to the Philippines. Melor (1527) formed south of Yap Island and caused severe damage to the Philippines.

**APPENDIX B:**  
**Review of the 2015 Typhoon Season**  
**Provided by RSMC-Tokyo**

In the western North Pacific, 27 named tropical cyclones (TCs) formed in 2015, which was above normal, and 18 reached typhoon (TY) intensity (see Table 1). During the season, seven named TCs hit the continent. The mean genesis point of named TCs in 2015 excluding Halola (1512) and Kilo (1517) was at 13.0°N and 147.2°E, showing a southeastward deviation from the 30-year average\* (16.2°N and 137.4°E).

Four named TCs formed from January to March (see yellow lines in Figure 3). Mekkhala (1501) formed over the sea east of the Yap Islands and damaged the Philippines. Maysak (1504) formed northwest of Pohnpei Island and damaged Micronesia and the Philippines.

Five named TCs formed from April to June (see red lines in Figure 3). Noul (1506) formed east of Yap Island and damaged the Philippines. Kujira (1508) formed west of Paracel Islands and damaged China and Viet Nam. Chan-hom (1509) formed around the Marshall Islands and caused severe damage to China.

Three named TCs formed in July (see green lines in Figure 3). Linfa (1510) formed east of the Philippines and caused severe damage to the Philippines. Nangka (1511) formed over the sea around the Marshall Islands and damaged Japan. Halola (1512) entered the western North Pacific with STS intensity on 12 July.

Four named TC formed in August (see purple lines in Figure 3). Soudelor (1513) formed around the sea east of the Mariana Islands and cause severe damage to China. Goni (1515) formed east of Guam Island and cause severe damage to the Philippines.

Five named TCs formed in September (see blue lines in Figure 3). Kilo(1517) entered the western North Pacific with TY intensity on 1 September. Etau (1518) formed west of the Ogasawara Islands and damaged Japan. Vamco (1519) formed over the sea east of Viet Nam and damaged Vietnam and Cambodia. Dujuan (1521) formed south-southeast of Okinotorishima Island and damaged China.

Six named TCs formed from October to December (see orange lines in Figure 3). Mujigae (1522) formed off the eastern coast of Luzon Island and caused severe damage to the Philippines and China. Koppu (1524) formed west of the Northern Mariana Islands and caused severe damage to the Philippines. Melor (1527) formed south of Yap Island and caused severe damage to the Philippines.

\* The 30-year average is from 1981 to 2010

Table 1 List of the tropical cyclones reaching TS intensity or higher in 2015  
 Halola was of TD intensity between 00 UTC 17 July and 18 UTC 19 July.  
 Soudelor was of TD intensity between 12 UTC 9 August and 00 UTC 11 August.

Tropical Cyclone	Duration (UTC)				Minimum Central Pressure			Max Wind		
	(TS or higher)				(UTC)	lat (N)	long (E)		(hPa)	(kt)
STS Mekkhala (1501)	131200	Jan	-	181800	Jan	161800	11.0	127.5	975	60
TY Higos (1502)	071800	Feb	-	111200	Feb	100600	14.2	154.2	940	90
TS Bavi (1503)	110600	Mar	-	171200	Mar	131800	11.0	156.9	990	45
TY Maysak (1504)	271800	Mar	-	050600	Apr	310600	10.0	141.3	910	105
TS Haishen (1505)	040600	Apr	-	051200	Apr	041800	9.1	151.6	998	35
TY Noul (1506)	031800	May	-	120600	May	100000	17.0	123.3	920	110
TY Dolphin (1507)	091200	May	-	210000	May	160600	15.8	141.5	925	100
TS Kujira (1508)	210000	Jun	-	241800	Jun	211200	16.8	111.6	985	45
TY Chan-hom (1509)	301200	Jun	-	130000	Jul	091800	25.1	126.5	935	90
STS Linfa (1510)	021200	Jul	-	100000	Jul	080000	21.5	118.7	980	50
TY Nangka (1511)	031800	Jul	-	171200	Jul	071200	14.3	153.5	925	100
TY Halola (1512)	130000	Jul	-	261200	Jul	211800	23.0	140.5	955	80
TY Soudelor (1513)	010600	Aug	-	111200	Aug	031800	17.9	140.7	900	115
TS Molave (1514)	070600	Aug	-	140000	Aug	101800	31.1	141.8	985	45
TY Goni (1515)	141800	Aug	-	251200	Aug	231800	25.2	124.6	930	100
TY Atsani (1516)	141800	Aug	-	250600	Aug	190000	18.7	152.9	925	100
TY Kilo (1517)	020000	Sep	-	111200	Sep	020000	24.0	179.8	950	80
STS Etau (1518)	071200	Sep	-	090600	Sep	080600	29.3	138.3	985	50
TS Vamco (1519)	131800	Sep	-	150000	Sep	140000	15.0	110.3	998	35
TY Krovanh (1520)	151800	Sep	-	211200	Sep	171200	22.2	143.5	945	85
TY Dujuan (1521)	221200	Sep	-	291200	Sep	270000	22.3	127.5	925	110
TY Mujigae (1522)	011200	Oct	-	050000	Oct	040000	20.5	111.5	950	85
STS Choi-wan (1523)	020600	Oct	-	071800	Oct	070000	28.5	151.3	965	60
TY Koppu (1524)	131200	Oct	-	210600	Oct	171800	16.1	122.1	925	100
TY Champi (1525)	140000	Oct	-	251200	Oct	181200	19.8	140.2	930	95
TY In-fa (1526)	171200	Nov	-	270000	Nov	210000	11.2	142.9	935	95
TY Melor (1527)	110600	Dec	-	170000	Dec	140000	12.5	125.8	935	95

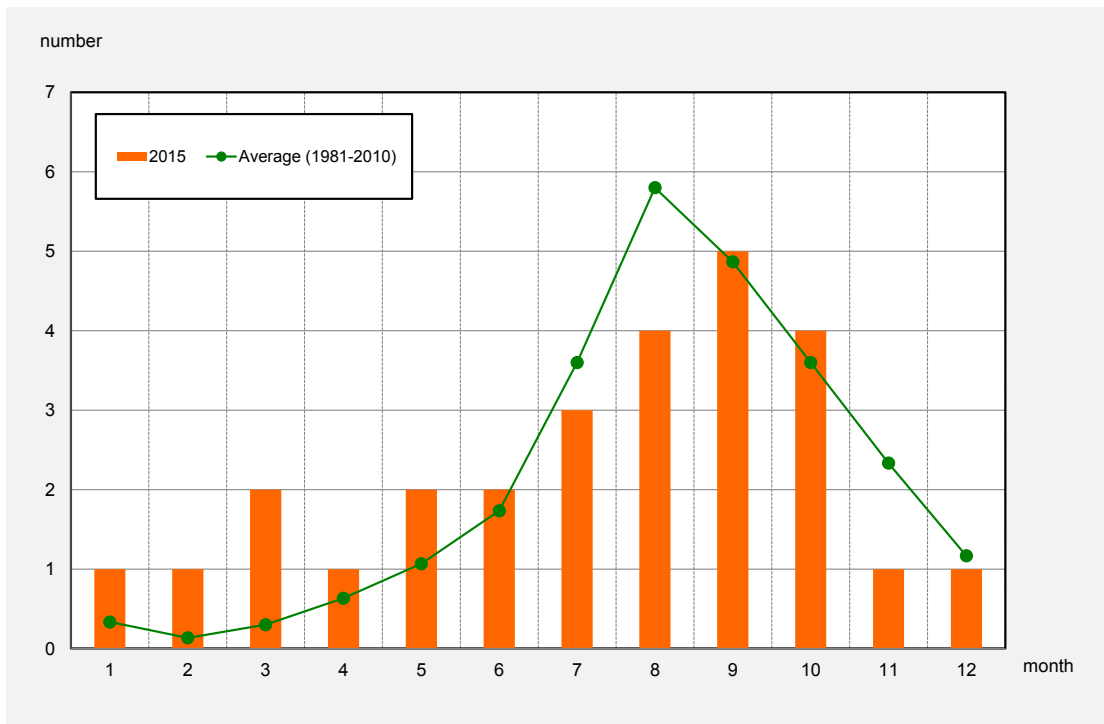


Figure 1 Monthly formation number of named TCs in 2015

Red bar: formation number in 2015, blue line: 30-year average from 1981 to 2010

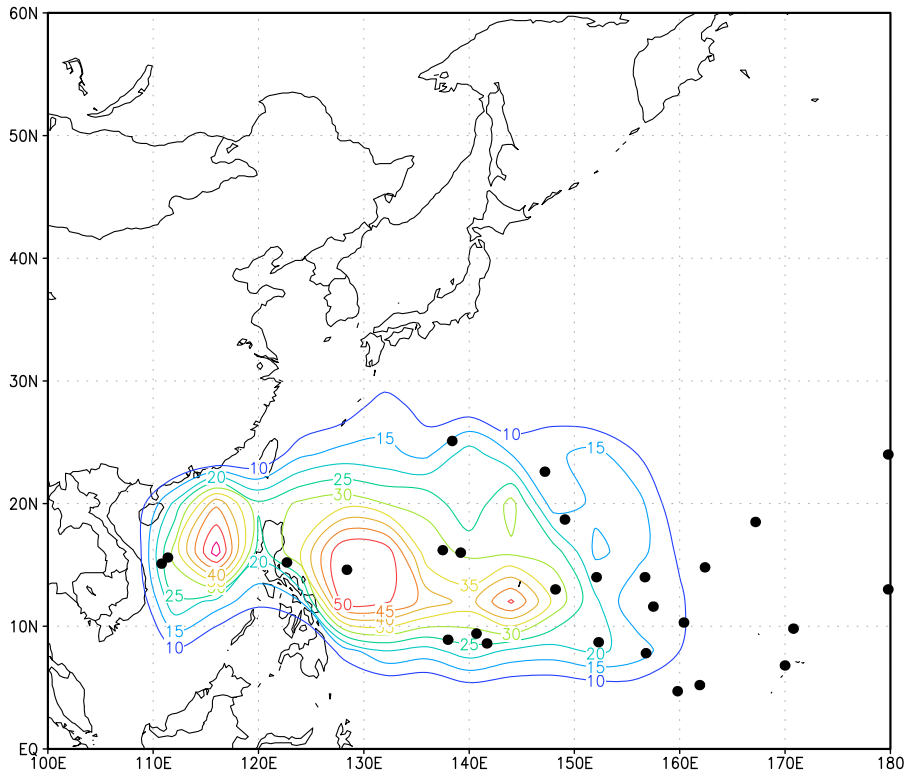


Figure 2 Genesis points of Tropical Cyclones in 2015 (dots) and frequency distribution of genesis points for 1951-2014 (lines)

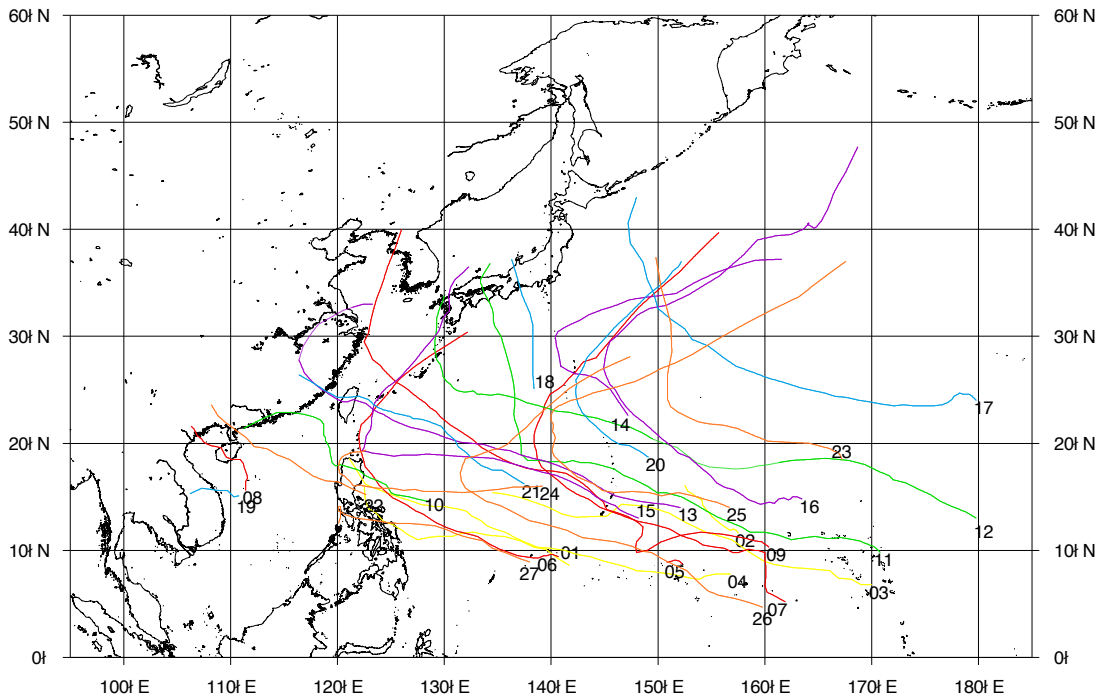


Figure 3 Tracks of Tropical Cyclones in 2015

The numbers represent the genesis points of named TCs (the last two digits of their identification numbers). Dashed lines of Halola and Soudelor indicate that the maximum sustained wind speed is less than 34 kt.

## **Narrative Accounts of the 27 Named Tropical Cyclones in 2015**

### **STS MEKKHALA (1501)**

MEKKHALA formed as a tropical depression (TD) over the sea east of the Yap Islands at 00 UTC on 13 January 2015 and moved westward. It was upgraded to tropical storm (TS) intensity over the same waters at 12 UTC the same day. Continuing westward, MEKKHALA reached its peak intensity with maximum sustained winds of 60 kt and a central pressure of 975 hPa east of Samar Island of the Philippines at 18 UTC on 16 January. Moving northwestward, it hit the island and the southern part of Luzon Island the next day. After weakening to TD intensity east of Luzon Island at 18 UTC on 18 January, MEKKHALA moved slowly eastward and dissipated over the same waters at 00 UTC on 21 January.

### **TY HIGOS (1502)**

HIGOS formed as a tropical depression (TD) north of Pohnpei Island at 12 UTC on 6 February 2015 and moved northward. It was upgraded to tropical storm (TS) intensity over the same waters at 18 UTC on 7 February. Moving northwestward, HIGOS was upgraded to typhoon (TY) intensity east of the Mariana Islands at 18 UTC on 9 February. After reaching its peak intensity with maximum sustained winds of 90 kt and a central pressure of 940 hPa at 06 UTC on 10 February, HIGOS rapidly weakened to TD intensity over the same waters at 12 UTC the next day. Turning northward on 12 February, it dissipated at 18 UTC the same day.

### **TS BAVI (1503)**

BAVI formed as a tropical depression (TD) around sea of the Marshall Islands at 06 UTC on 10 March 2015. Moving north-westward, it was upgraded to tropical storm (TS) intensity over the same waters at 06 UTC the next day. Keeping its westward track, BAVI reached its peak intensity with maximum sustained winds of 45 kt and a central pressure of 990hPa around sea north of Chuuk Islands at 18 UTC on 13 March. Moving westward, BAVI weakened to TD intensity around sea east of the Philippines at 12 UTC on 17 March, and BAVI dissipated around the Philippines at 18 UTC on 21 March.

### **TY MAYSAK (1504)**

MAYSAK formed as a tropical depression (TD) over the sea east of Pohnpei Island at 12 UTC on 26 March 2015. Moving west-northwestward, it was upgraded to tropical storm (TS) intensity northwest of the island at 18 UTC the next day and turned westward. MAYSAK was upgraded to typhoon (TY) intensity around the Chuuk Islands at 00 UTC on 29 March. After turning west-northwestward, it reached its peak intensity with maximum sustained winds of 105 kt and a central pressure of 910 hPa east of the Yap Islands at 06 UTC on 31 March. MAYSAK kept its west-northwestward track and was downgraded to TS intensity on 18 UTC on 4 April before hitting Luzon Island. Crossing the island with TS intensity, it weakened to TD intensity around the northern

coast of the island at 06 UTC the next day. MAYSAK dissipated west of the Luzon Strait at 06 UTC on 07 April.

#### **TS HAISHEN (1505)**

HAISHEN formed as a tropical depression (TD) over the sea northwest of Pohnpei Island at 18 UTC on 2 April 2015 and moved west-northwestward. It was upgraded to tropical storm (TS) intensity north of the Chuuk Islands at 06 UTC on 4 April. After turning northwestward, HAISHEN reached its peak intensity with maximum sustained winds of 35 kt and a central pressure of 998 hPa around the Islands at 18 UTC the same day. After turning west-southwestward, it weakened to TD intensity over the same waters at 12 UTC the next day and dissipated there at 06 UTC on 6 April.

#### **TY NOUL (1506)**

NOUL formed as a tropical depression (TD) around the Caroline Islands at 06 UTC on 02 May 2015. Moving west-northwestward, it was upgraded to tropical storm (TS) intensity east of Yap Island at 18 UTC on 3 May and upgraded to typhoon (TY) intensity just west of the same island at 06 UTC on 6 May. NOUL gradually turned northwestward and reached its peak intensity with maximum sustained winds of 110 kt and a central pressure of 920 hPa east of Luzon Island at 00 UTC on 10 May. Gradually turning northeastward, NOUL accelerated along Okinawa Islands and transformed into an extratropical cyclone at 06 UTC on 12 May east of Tanegashima Island. It continued moving east-northeastward until it dissipated four days later near the dateline.

#### **TY DOLPHIN (1507)**

DOLPHIN formed as a tropical depression (TD) over the sea south of Pohnpei Island at 12 UTC on 6 May 2015 and moved eastward. Turning northwestward, it was upgraded to tropical storm (TS) intensity east of the island at 12 UTC on 9 May. Moving northward and then turning westward, DOLPHIN was upgraded to typhoon (TY) intensity over the sea northwest of the island at 00 UTC on 13 May. It reached its peak intensity with maximum sustained winds of 100 kt and a central pressure of 925 hPa west of the Mariana Islands at 06 UTC on 16 May. Turning northeastward, DOLPHIN was downgraded to severe tropical storm (STS) intensity northeast of Chichijima Island at 06 UTC on 20 May. After accelerating northeastward, DOLPHIN transformed into an extratropical cyclone over the sea far east of Japan at 00 UTC the next day. Continuing northeastward, it crossed longitude 180 degrees east over the Bering Sea before 06 UTC on 24 May.

#### **TS KUJIRA (1508)**

KUJIRA formed as a tropical depression (TD) south of the Paracel Islands at 18 UTC on 19 June 2015 and moved west-northwestward. Gradually turning northward, it was upgraded to tropical storm (TS) intensity west of the islands at 00 UTC on 21 June. KUJIRA reached its peak intensity with maximum sustained winds of 45 kt and a central pressure of 985 hPa over the same waters at 12 UTC the same day. KUJIRA turned westward and hit Hainan Island with TS intensity around 12 UTC on 22

June and weakened slowly. After crossing the island, it entered the Gulf of Tongking and temporarily developed. KUJIRA moved west-northwestward and hit the northeastern part of Vietnam with TS intensity after 06 UTC on 24 June. KUJIRA weakened to TD intensity there at 18 UTC the same day and dissipated twelve hours later.

#### **TY CHAN-HOM (1509)**

CHAN-HOM formed as a tropical depression (TD) around the Marshall Islands at 06 UTC on 29 June 2015. Moving north-northeastward then turning northwestward, CHAN-HOM was upgraded to tropical storm (TS) intensity around the Marshall Islands at 12 UTC on 30 June, and gradually turned west-southwestward. After moving toward north then turning northwestward, CHAN-HOM was upgraded to typhoon (TY) intensity southeast of Okinotorishima Island at 00 UTC on 07 July. CHAN-HOM reached its peak intensity with maximum sustained winds of 90 kt and a central pressure of 935 hPa around Miyakojima Island at 18 UTC on 09 July. Keeping its northwestward track, it passed between Miyakojima Island and Kumejima Island with TY intensity late on 9 July. After turning north-northeastward in the East China Sea, CHAN-HOM transformed into an extratropical cyclone in the northern part of the Korean Peninsula at 00 UTC on 13 July, and dissipated there at 15 UTC the same day.

#### **STS LINFA (1510)**

LINFA formed as a tropical depression (TD) east of the Philippines at 18 UTC on 1 July 2015 and moved northwestward. After upgrading to tropical storm (TS) intensity over the same waters at 12 UTC the next day, it moved west-northwestward with TS intensity and hit Luzon Island late on 4 July. After turning north-northwestward, LINFA upgraded to severe tropical storm (STS) intensity and reached its peak intensity with maximum sustained winds of 50 kt and a central pressure of 980 hPa southwest of Taiwan at 00 UTC on 8 July. After turning westward and hitting the southern part of China with STS intensity early on 9 July, it downgraded to TS intensity on 12 UTC the same day and weakened to TD intensity in the same area 12 hours later. LINFA dissipated in the southern part of China at 06 UTC on 10 July.

#### **TY NANGKA (1511)**

NANGKA formed as a tropical depression (TD) over the sea around the Marshall Islands at 18 UTC on 02 July 2015 and moved northwestward. It was upgraded to tropical storm (TS) intensity over the same waters at 18 UTC the next day and NANGKA gradually turned westward. After turning northwestward it was upgraded to typhoon (TY) intensity north of Pohnpei Island at 12 UTC on 06 July. Keeping its northwestward track, NANGKA reached its peak intensity with maximum sustained winds of 100 kt and a central pressure of 925 hPa around the northern part of the Mariana Islands at 06 UTC on 9 July. After sharply turning north-northwestward over the sea south of Japan, NANGKA made landfall in Muroto City, Kouchi Prefecture with TY intensity around 14 UTC on 16 July. After passing Shikoku Island, it made landfall in Kurashiki City, Okayama Prefecture with STS intensity



around 21 UTC the same day again. Turning northeastward, NANGKA weakened to TD intensity over the Sea of Japan at 12 UTC on 17 July and dissipated over the same waters at 12 UTC the next day.

#### **TY HALOLA (1512)**

HALOLA crossed longitude 180 degrees east with severe tropical storm (STS) intensity over the sea east of the Marshall Islands after 18 UTC on 12 July 2015 and entered the western North Pacific. Moving west-northwestward, it was upgraded to typhoon (TY) intensity northeast of the islands at 00 UTC on 14 July. Turning westward, HALOLA was downgraded to tropical storm (TS) intensity west of Wake Island at 12 UTC on 16 July and weakened to tropical depression (TD) intensity over the same waters 12 hours later. Turning west-northwestward, it developed again and was upgraded to TS intensity east of the Northern Mariana Islands at 18 UTC on 19 July. HALOLA was upgraded to TY intensity north of the islands at 00 UTC on 21 July and reached its peak intensity with maximum sustained winds of 80 kt and a central pressure of 955 hPa south of Iwoto Island 18 hours later. After turning northward and passing through the Amamigunto Islands with TY intensity, it was downgraded to TS intensity west of Kyushu Island at 06 UTC on 26 July. Keeping its northward track, HALOLA passed through Saikai City, Nagasaki Prefecture around 09 UTC and made landfall on Sasebo City, Nagasaki Prefecture around 10 UTC that day. Turning north-northeastward, it weakened to TD intensity over the northwestern part of Kyushu Island at 12 UTC that day and dissipated over the same area six hours later.

#### **TY SOUDELOR (1513)**

SOUDELOR formed as a tropical depression (TD) northwest of the Marshall Islands at 18 UTC on 29 July 2015. Moving westward, SOUDELOR was upgraded to tropical storm (TS) intensity around the sea east of the Mariana Islands at 06 UTC on 1 August. Gradually turning west-northwestward, SOUDELOR was upgraded to typhoon (TY) intensity around the Mariana Islands at 06 UTC the next day. Keeping its west-northwestward track, SOUDELOR reached its peak intensity with maximum sustained winds of 115 kt and a central pressure of 900 hPa around the sea west of the Mariana Islands at 18 UTC on 3 August. After crossing Taiwan Island with TY intensity from 7 to 8 August, SOUDELOR weakened to TD intensity in the southern part of China at 12 UTC on 09 August, and gradually turned east-northeastward. SOUDELOR was upgraded to TS intensity again over the East China Sea at 00 UTC on 11 August, and then weakened to TD intensity over the same waters 12 hours later. Transforming into an extratropical cyclone over the same waters at 18 UTC on 11 August, SOUDELOR dissipated around Juju Island at 06 UTC the next day.

#### **TS MOLAVE (1514)**

MOLAVE formed as a tropical depression (TD) over the sea east of the Mariana Islands at 00 UTC on 06 August 2015 and moved northward. Turning northwestward, it was upgraded to tropical storm (TS) intensity around southeast of the Ogasawara Islands at 06 UTC the next day. Turning northward, MOLAVE reached its peak intensity with maximum sustained winds of 45 kt and a central pressure of

985 hPa east of Torishima Island at 18 UTC on 10 August. MOLAVE accelerated northeastward and transformed into an extratropical cyclone far east of Japan at 00 UTC on 14 August. MOLAVE moved eastward and crossed longitude 180 degrees east at 00 UTC on 18 August.

#### **TY GONI (1515)**

GONI formed as a tropical depression (TD) east of the Mariana Islands at 18 UTC on 13 August 2015 and moved west-northwestward. Keeping its west-northwestward track, GONI was upgraded to tropical storm (TS) intensity east of Guam Island at 18 UTC on 14 August and was upgraded to typhoon (TY) intensity west of Saipan Island at 12 UTC two days later. It reached its peak intensity with maximum sustained winds of 95 kt and a central pressure of 935 hPa west of the Mariana Islands at 06 UTC on 17 August and gradually turned westward. After moving westward for more than three days, GONI turned sharply northward over the sea north of Luzon Island and passed through Iriomotejima Island around 10 UTC on 23 August. It turned northeastward and passed through Akune City, Kagoshima Prefecture after 19 UTC on 24 August. After GONI passed through Uki City, Kumamoto Prefecture after 20 UTC on 24 August, it made landfall in Arao City, Kumamoto Prefecture with TY intensity after 21 UTC the same day. GONI entered the Sea of Japan and transformed into an extratropical cyclone northwest of the Oki Islands at 12 UTC on 25 August. After moving northward over the same waters, it dissipated in Northeast China at 12 UTC on 30 August.

#### **TY ATSANI (1516)**

ATSANI formed as a tropical depression (TD) northwest of the Marshall Islands at 00 UTC on 14 August 2015 and moved westward slowly. Keeping its westward track, ATSANI was upgraded to tropical storm (TS) intensity over the same waters at 18 UTC the same day. It was upgraded to typhoon (TY) intensity north of Pohnpei Island at 00 UTC on 17 August and turned northwestward. Moving northwestward, ATSANI reached its peak intensity with maximum sustained winds of 100 kt and a central pressure of 925 hPa east of the Mariana Islands at 00 UTC on 19 August. Keeping its northwestward track ATSANI passed over the sea east of the Ogasawara Islands and gradually turned northeastward. Accelerating northeastward over the sea far east of Japan, ATSANI transformed into an extratropical cyclone there at 06 UTC on 25 August. Keeping its northeastward track and gradually decelerating, ATSANI dissipated southeast of the Kamchatka Peninsula at 12 UTC on 29 August.

#### **TY KILO (1517)**

KILO crossed longitude 180 degrees east with typhoon (TY) intensity over the sea northeast of Wake Island after 18 UTC on 1 September 2015 and entered the western North Pacific. Before crossing longitude 180 degrees east, it was in its peak intensity with maximum sustained winds of 90 kt and a central pressure of 945 hPa at 18 UTC on 1 September. Moving westward and turning gradually northwestward, KILO was downgraded to severe tropical storm (STS) intensity east of Japan at 12 UTC on 9 September. After turning north-northeastward, it transformed into an extratropical cyclone east of Hokkaido Island at 12 UTC on 11 September. After passing the Chishima Islands and entering

the Sea of Okhotsk, KILO crossed latitude 60 degrees north before 00 UTC on 13 September.

#### **STS ETAU (1518)**

ETAU formed as a tropical depression (TD) east of Okinotorishima Island at 00 UTC on 06 September 2015. Moving north-northwestward, ETAU was upgraded to tropical storm (TS) intensity west of the Ogasawara Islands at 12 UTC on 07 September, and reached its peak intensity with maximum sustained winds of 50 kt and a central pressure of 985 hPa southwest of Torishima Island at 06 UTC on the next day. Just after passing through the Atsumi Peninsula in Aichi Prefecture after 00 UTC on 9 September, EtaU made landfall on Nishio City in the same prefecture with TS intensity around 0030 UTC the same day. After crossing Honshu Island and entering the Sea of Japan, it transformed into an extratropical cyclone around the Noto Peninsula at 06 UTC on 9 September. Gradually turning northeastward, ETAU dissipated over the waters west of the Tsugaru Strait at 18 UTC on 11 September.

#### **TS VAMCO (1519)**

VAMCO formed as a tropical depression (TD) over the South China Sea at 00 UTC on 13 September 2015 and moved westward. It was upgraded to tropical storm (TS) intensity over the sea east of Viet Nam at 18 UTC on same day. VAMCO reached its peak intensity with maximum sustained winds of 35 kt and a central pressure of 998 hPa over the same waters at 00 UTC the next day. After hitting Viet Nam late on 14 September, it weakened to TD intensity there at 00 UTC the next day and dissipated 12 hours later.

#### **TY KROVANH (1520)**

KROVANH formed as a tropical depression (TD) east of Guam Island at 18 UTC on 13 September 2015 and moved northward. Turning northwestward, it was upgraded to tropical storm (TS) intensity east of the Northern Mariana Islands at 18 UTC on 15 September. Keeping its northwestward track, KROVANH was upgraded to typhoon (TY) intensity north of the Northern Mariana Islands at 18 UTC the next day and reached its peak intensity with maximum sustained winds of 85 kt and a central pressure of 945 hPa south of the Ogasawara Islands 18 hours later. After gradually turning northeastward, it was downgraded to TS intensity east of Hachijojima Island at 06 UTC on 20 September. Keeping its northeastward track, KROVANH transformed into an extratropical cyclone east of Japan at 12 UTC the next day and dissipated south of the Aleutian Islands at 12 UTC on 26 September.

#### **TY DUJUAN (1521)**

DUJUAN formed as a tropical depression (TD) east of Guam Island at 18 UTC on 19 September 2015. After moving westward, it gradually turned northwestward and was upgraded to tropical storm (TS) intensity south-southeast of Okinotorishima Island at 12 UTC on 22 September. Keeping its northwestward track, DUJUAN was upgraded to typhoon (TY) intensity west of Okinotorishima Island at 06 UTC on 25 September and reached its peak intensity with maximum sustained winds of 110 kt

and a central pressure of 925 hPa southeast of Miyakojima Island at 00 UTC two days later. After turning westward, DUJUAN hit Taiwan Island with TY intensity after 09 UTC on 28 September and crossed the island. After it entered Taiwan Strait and turned northwestward. DUJUAN hit southeast coast of China with STS intensity around 00 UTC on 29 September. Moving northwestward, DUJUAN weakened to TD intensity in southern part of China 12 hours later. It dissipated in central part of China at 12 UTC on 30 September.

#### **TY MUJIGAE (1522)**

MUJIGAE formed as a tropical depression (TD) over the sea east of the Philippines at 18 UTC on 30 September 2015. Moving northwestward, it was upgraded to tropical storm (TS) intensity off the eastern coast of Luzon Island at 12 UTC the next day and then crossed the island. Keeping its northwestward track, MUJIGAE was upgraded to typhoon (TY) intensity east of Hainan Island at 12 UTC on 3 October and reached its peak intensity with maximum sustained winds of 85 kt and a central pressure of 950 hPa 12 hours later. After hitting the southern part of China, it weakened to TD intensity over the same region at 00 UTC on 5 October and dissipated six hours later.

#### **STS CHOI-WAN (1523)**

CHOI-WAN formed as a tropical depression (TD) south of Wake Island at 06 UTC on 01 October 2015. Moving northward, it was upgraded to tropical storm (TS) intensity around the same island at 06 UTC the next day. After turning westward, CHOI-WAN was upgraded to severe tropical storm (STS) intensity south-southeast of Minamitorishima Island at 00UTC on 5 October. It turned northward again and reached its peak intensity with maximum sustained winds of 60 kt and a central pressure of 965 hPa northwest of Minamitorishima Island at 00 UTC on 07 October. Keeping its northward track, CHOI-WAN transformed into an extratropical cyclone east of Japan at 18 UTC the same day, and dissipated west of the Kamchatka Peninsula at 00 UTC on 12 October.

#### **TY KOPPU (1524)**

KOPPU formed as a tropical depression (TD) over the sea east of Guam Island at 00 UTC on 12 October 2015. Moving west-northwestward, it was upgraded to tropical storm (TS) intensity west of the Northern Mariana Islands at 12 UTC the next day. Keeping its westward track, KOPPU was upgraded to typhoon (TY) intensity east of Luzon Island at 18 UTC on 15 October and reached its peak intensity with maximum sustained winds of 100 kt and a central pressure of 925 hPa off the eastern coast of the island at 18 UTC 17 October. After crossing Luzon Island and turning northwestward, it was downgraded to TS intensity off the western coast of the island at 06 UTC on 19 October. Turning gradually east-northeastward, KOPPU weakened to TD intensity off the northern coast of the island at 06 UTC on 21 October and dissipated six hours later.

#### **TY CHAMPI (1525)**

CHAMPI formed as a tropical depression (TD) northeast of Pohnpei Island at 00 UTC on 13 October 2015 and moved west-northwestward. Keeping its west-northwestward track, it was upgraded to tropical storm (TS) intensity north of the island at 00 UTC the next day. After turning northwestward, CHAMPI was upgraded to typhoon (TY) intensity northwest of Saipan Island at 12 UTC on 16 October. Decelerating northward, it reached its peak intensity with maximum sustained winds of 95 kt and a central pressure of 930 hPa east of Okinotorishima Island at 12 UTC on 18 October. After turning northeastward, CHAMPI was downgraded to severe tropical storm (STS) intensity northwest of Minamitorishima Island at 00 UTC on 24 October. Accelerating northeastward, it transformed into an extratropical cyclone far east of Japan at 12 UTC on 25 October and crossed longitude 180 degrees at 18 UTC the next day.

#### **TY IN-FA (1526)**

IN-FA formed as a tropical depression (TD) over the sea southeast of Pohnpei Island at 18 UTC on 16 November 2015 and moved west-northwestward. It was upgraded to tropical storm (TS) intensity south of the island at 12 UTC the next day. Keeping its west-northwest track, IN-FA was upgraded to typhoon (TY) intensity southeast of Guam Island at 00 UTC on 20 November. It reached its peak intensity with maximum sustained winds of 95 kt and a central pressure of 935 hPa southwest of the island at 00 UTC the next day. After gradually turning northeastward over the sea east of the Philippines, IN-FA transformed into an extratropical cyclone east-northeast of Chichijima Island 00 UTC on 27 November. It dissipated over the same waters 12 hours later.

#### **TY Melor(1527)**

MELOR formed as a tropical depression (TD) over the sea near the Caroline Islands at 00 UTC on 10 December 2015. Moving west-northwestward, it was upgraded to tropical storm (TS) intensity south of Yap Island at 06 UTC the next day. Keeping its west-northwestward track, MELOR was upgraded to typhoon (TY) intensity east of the Philippines at 18 UTC on 12 December and reached its peak intensity with maximum sustained winds of 95 kt and a central pressure of 935 hPa off the northeastern coast of Samar Island at 00 UTC on 14 December. After crossing the central part of the Philippines, it was downgraded to TS intensity around Mindoro Island at 12 UTC on 16 December. MELOR weakened to TD intensity over the same waters at 00 UTC the next day and dissipated six hours later.