## <u>Tropical cyclone warnings of Signal No. 8 or above issued by the Observatory during the passage of Shirley in August 1968</u>

Local Storm Warning issued at 6:00 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 was hoisted at 6 a.m., which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are northerly, have freshened since midnight and are already strong in exposed places offshore. Gusts of 37 knots have been recorded at Cheung Chau.

At 6 a.m., Severe Tropical Storm Shirley was centred near 20.5 degrees north, 115.8 degrees east, that is about 140 miles southeast of Hong Kong and was moving west-northwest at 9 knots.

There is no information concerning wind strength near the centre of the storm but winds of 60 knots were reported at Pratas Island when the centre was about 60 miles from that station.

Shirley has slowed down slightly but it continues to move closer to Hong Kong. If this movement persists, the centre of Shirley will pass about 70 miles south-southwest of the Colony this evening. In Hong Kong winds are expected to increase and present indications are that gales are likely to reach Hong Kong this afternoon. The eye of Shirley is now 80 miles in diameter.

Local Storm Warning issued at 6:30 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 was hoisted at 6 a.m., which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are now strong, although the harbour area is sheltered from the northerly winds. Gusts of 44 knots have been recorded at Waglan Island and 57 knots at Tate's Cairn.

At 6 a.m., Severe Tropical Storm Shirley was centred near 20.5 degrees north, 115.8 degrees east, that is about 140 miles southeast of Hong Kong and was moving west-northwest at 9 knots.

If it continues on its present track it will pass about 70 miles south-southwest of Hong Kong this evening.

In Hong Kong, winds are expected to increase and present indications are that gales are likely to reach Hong Kong this afternoon. The eye of Shirley is about 80 miles in diameter.

Local Storm Warning issued at 7:30 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are already strong and gusts of 39 knots have been recorded at the Royal Observatory and 44 knots at Waglan Island.

At 7 a.m., Severe Tropical Storm Shirley was centred near 20.6 degrees north, 115.5 degrees east, that is about 130 miles southeast of Hong Kong and was moving west-northwest at 10

knots.

The storm has intensified slightly but there is no information concerning wind strength near the centre of the storm.

If it continues on its present track it will pass about 70 miles south-southwest of Hong Kong this evening.

In Hong Kong, winds are expected to increase and present indications are that gales will reach the Colony this afternoon. Pressure is falling steadily in Hong Kong.

0.64 inches of rainfall have been recorded at the Observatory since 7 a.m. yesterday.

Local Storm Warning issued at 8:30 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are already strong and are increasing from the north-northeast. Gusts of 49 knots have been recorded at the Royal Observatory, 59 knots at Tate's Cairn and 69 knots at Waglan Island during the past hour.

At 8 a.m., Severe Tropical Storm Shirley was centred near 20.6 degrees north, 115.4 degrees east, that is about 120 miles south-southeast of Hong Kong and was moving west-northwest at 10 knots.

There is no information concerning wind strength near the centre of the storm but winds of 37 knots have been reported by a ship about 70 miles east of Hong Kong.

If it continues on its present track it will pass about 70 miles south-southwest of Hong Kong this evening, in which case easterly gales are expected to affect Hong Kong this afternoon. Pressure continues to fall steeply in Hong Kong.

0.65 inches of rainfall have been recorded at the Observatory since 7 p.m. last night.

Local Storm Warning issued at 9:30 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are generally strong and are increasing from the north-northeast.

At 9 a.m., Severe Tropical Storm Shirley was centred near 20.5 degrees north, 115.4 degrees east, that is about 130 miles south-southeast of Hong Kong. It now appears to be moving more slowly at 8 knots towards the west-northwest.

The eye of the storm is now clearly shown on the Observatory's radar. It is about 60 miles in diameter.

If the storm continues on its present track it will pass about 70 miles south-southwest of Hong

Kong this evening, in which case easterly gales are expected to affect Hong Kong this afternoon.

0.73 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday. Rainfall is expected to become heavier tonight.

Local Storm Warning issued at 10:30 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are generally strong and are increasing from the north-northeast. Gusts of 51 knots have been recorded at Cape Collinson and 64 knots at Tate' Cairn during the past hour.

At 10 a.m., Severe Tropical Storm Shirley was relocated near 21.0 degrees north, 115.2 degrees east, that is about 100 miles southeast of Hong Kong and was moving northwest at 10 knots.

If it continues on its present track, it will pass close to Hong Kong within 50 miles this evening.

0.84 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 11:30 a.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are increasing from the north-northeast. Gales are blowing in exposed places and offshore. Gusts of 80 knots have been recorded at Tate's Cairn. The harbour is relatively sheltered from the north but as the winds turn and become easterly, a rapid increase in strength will be experienced.

At 11 a.m., Severe Tropical Storm Shirley was centred near 21.1 degrees north, 115.1 degrees east, that is about 90 miles southeast of Hong Kong and was moving northwest at 10 knots.

If it continues on its present track, the centre will be very close to the Colony this evening.

0.89 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday and rainfall is expected to become heavier tonight.

Local Storm Warning issued at 12:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are now reaching gale force in exposed places. Gusts of 54 knots have been recorded at the Royal Observatory and 80 knots at Tate's Cairn. The harbour is relatively sheltered from the north but as the winds change direction, a rapid increase in strength will be experienced.

At noon, Severe Tropical Storm Shirley was centred near 21.2 degrees north, 114.9 degrees east, that is about 80 miles southeast of Hong Kong and was moving northwest at 10 knots.

If it continues on its present track, it will pass near or over the Colony this evening.

The pressure at the Royal Observatory is the lowest since October 1964 and is still falling.

0.93 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday and a further 3 to 6 inches are expected during the next twenty four hours.

Local Storm Warning issued at 1:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

Winds over the Colony are now reaching gale force in exposed places. Gusts of 81 knots have been recorded at Tate's Cairn and 54 knots at the Royal Observatory. The harbour is relatively sheltered from the north but as the winds change direction, a rapid increase in strength will be experienced.

At 1 p.m., Typhoon Shirley was centred near 21.3 degrees north, 114.9 degrees east, that is about 75 miles south-southeast of Hong Kong and was moving northwest at 10 knots. Aircraft reconnaissance reports show that the storm has intensified slightly and Shirley has been upgraded to a typhoon.

If it continues on its present track it will pass near or over the Colony this evening.

1.34 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday and a further 3 to 6 inches are expected during the next twenty four hours.

Local Storm Warning issued at 2:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.7 is still hoisted.

Gale or storm force winds with mean speed 34 knots or more are expected from the northeast quarter.

North northeasterly winds over the Colony are now of gale force in exposed places. Gusts of 74 knots have been recorded at Waglan Island and 81 knots at Tate's Cairn. The harbour is still relatively sheltered from the north and northeast but as the winds change direction, a rapid increase in the strength of winds in the harbour will occur.

At 2 p.m., Typhoon Shirley was centred near 21.4 degrees north, 114.7 degrees east, that is about 65 miles south-southeast of Hong Kong and was moving northwest at 10 knots.

If it continues on its present track it will pass near or over the Colony this evening.

1.54 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday and a further 3 to 6 inches are expected during the next twenty four hours.

Local Storm Warning issued at 3:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.9 was hoisted at 2:40 p.m., which means that winds are expected to increase.

North-northeast winds over the Colony are now generally of gale force and are increasing. Gusts of 88 knots have been recorded at Tate's Cairn, 86 knots at Waglan Island and 71 knots at the Royal Observatory.

At 3 p.m., Typhoon Shirley was centred near 21.5 degrees north, 114.7 degrees east, that is about 65 miles south-southeast of Tate's Cairn and was moving northwest at 10 knots.

Due to the typhoon, sea level in Victoria Harbour is expected to rise four to five feet above the normal predicted level. In Tolo Harbour the effect of the tidal surge will be greater and may reach seven to nine feet.

The eye of Typhoon Shirley is now very close to the Colony and it continues to move closer. The rain-free area is circular, 50 miles across and the edge now lies about 20 miles away from Hong Kong Island.

1.90 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 4:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 was hoisted at 4:10 p.m., which means that typhoon force winds with mean speed 64 knots or more are expected from any direction as the centre passes over or near to the Colony.

North-northeast winds over the Colony are generally of gale force and are increasing. Gusts of 113 knots have been recorded at Waglan Island, 110 knots at Tate's Cairn and 73 knots at Cheung Chau.

At 4 p.m., Typhoon Shirley was centred near 21.7 degrees north, 114.7 degrees east, that is about 45 miles south-southeast of Tate's Cairn and was moving northwest at 10 knots.

Due to the typhoon, sea level in Victoria Harbour is expected to rise four to five feet above the normal level. In Tolo Harbour the effect of the tide surge will be greater.

The eye of Typhoon Shirley is now very close and is moving directly towards the Colony. The area which is relatively free of rain is circular, 50 miles across and the edge now lies just south of Waglan Island.

2.83 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 5:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted, which means that typhoon force winds with mean speed 64 knots or more are expected from any direction as the centre passes over or near to the Colony.

Winds are of typhoon strength at Tate's Cairn and at Waglan Island. Gusts of 113 knots have been recorded at Waglan Island, 110 knots at Tate's Cairn, 104 knots at Tai Mo Shan and 82 knots at Cape Collinson.

At 5 p.m., Typhoon Shirley was centred near 21.9 degrees north, 114.4 degrees east, that is about 30 miles south-southeast of Tate's Cairn and was moving northwest at 10 knots.

Due to the typhoon, sea level in Victoria Harbour is expected to rise four or five feet above the normal level. In Tolo Harbour the effect of the tide surge will be greater.

The eye of Typhoon Shirley is just southeast of Hong Kong and is large. The relatively rain-free area being 50 miles across. As this area moves over Colony, some places will experience an improvement as the rainfall lessens. However precautions should, on no account, be relaxed as violent winds and heavy rain will return after the eye has passed. When this happens, places that have been sheltered may become dangerously exposed to southwesterly winds.

4.08 inches of rainfall have been recorded since 7 p.m. yesterday and a further four to six inches are expected during the next twelve hours.

Local Storm Warning issued at 6:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted which means that hurricane force winds with mean speed 64 knots or more are expected from any direction as the centre passes over or near to the Colony.

Winds over the Colony have moderated slightly during the last hour but will increase again soon. Gusts of 113 knots have been recorded at Waglan Island, 110 knots at Tate's Cairn, 104 knots at Tai Mo Shan and 82 knots at Cape Collinson.

At 6 p.m., Typhoon Shirley was centred near 22.0 degrees north, 114.3 degrees east, that is about 17 miles south-southeast of Tate's Cairn and was moving northwest at 10 knots.

Due to the typhoon, sea level in Victoria Harbour is expected to rise four or five feet above the normal level. In Tolo Harbour the effect of the tidal surge will be greater and may reach seven to nine feet.

The eye of Typhoon Shirley is centred just south of Stanley Peninsula and is large. The relatively rain-free area is circular and about 50 miles across. Rain falling over the southern part of the Colony is now only moderately heavy. However on no account should precautions be relaxed, as violent winds and heavy rain will return after the eye has passed. When this happens, places that have been sheltered may become dangerously exposed to southwesterly winds.

4.85 inches of rain have been recorded since 7 p.m. yesterday and a further four to six inches are expected during the next twelve hours.

Local Storm Warning issued at 7:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted which means that hurricane force winds with

mean speed 64 knots or more are expected from any direction as the centre passes over the Colony.

At 7 p.m., Typhoon Shirley was centred near 22.1 degrees north, 114.2 degrees east, that is about 12 miles south of Tate's Cairn and was moving northwest at 10 knots towards Hong Kong Island.

Due to the typhoon, sea level in Victoria Harbour has risen about three feet above the normal level. In Tolo Harbour the tidal surge is greater and has reached about six feet at Tai Po Kau.

The eye of Shirley is now affecting most parts of the Colony. Winds in Victoria Harbour are now only fresh and apart from the northwestern part of the New Territories. Rainfall is only moderately heavy. However it is very important that precautions should not be relaxed as violent winds and heavy rain will return after the eye has passed. Places that have been sheltered so far may become dangerously exposed to southwesterly winds.

4.98 inches of rain have been recorded since 7 p.m. yesterday.

Local Storm Warning issued at 8:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted which means that hurricane force winds with mean speed 64 knots or more are expected from the southwest after the eye moves across the Colony.

At 8 p.m., the eye of Typhoon Shirley was centred over Hong Kong Island and was moving northwest at 10 knots.

The eye is now affecting most parts of the Colony. Winds at the Royal Observatory are calm and rain there is only light. However it is emphasized that precautions should not be relaxed as violent southwesterly winds and heavy rain are expected after the eye has passed.

5.05 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 9:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted.

Hurricane force winds with mean speed 64 knots or more are expected from the southwest after the eye moves across the Colony.

At 9 p.m., Typhoon Shirley was centred over the northwestern part of the New Territories near Deep Bay and was moving northwest at 10 knots.

The eye is still affecting most parts of Hong Kong but its southern edge has now cleared the southern part of the Colony. Waglan Island is now outside the eye and winds there are increasing rapidly from the south-southwest with gusts up to 56 knots recorded in the last hour. It is important that precautions should not be relaxed.

5.17 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 10:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted which means that hurricane force winds with mean speed 64 knots or more are expected from the southwest quarter.

At 10 p.m., Typhoon Shirley was centred over Kwangtung province near 22.7 degrees north, 113.8 degrees east, that is about 30 miles northwest of Tate's Cairn and was moving northwest at 12 knots.

The eye has now moved almost clear of the Colony and winds have strengthened from the south-southwest. Gusts of 85 knots have been recorded at Waglan Island and 66 knots at Cape Collinson. Radar Observations showed that rainfall will become much heavier and another six to eight inches are expected in the next twelve hours. Flooding and some landslides can be expected during the next few hours. The sea level in Victoria Harbour is about two feet above the normal predicted level and is expected to rise another two or three feet overnight.

5.30 inches of rainfall have been recorded at the Royal Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 11:30 p.m. on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.10 is still hoisted which means that hurricane force winds with mean speed 64 knots or more are expected from the southwest quarter.

Gusts of 90 knots have been recorded at Cheung Chau and 83 knots at Tate's Cairn during the last hour.

At 11 p.m., Typhoon Shirley was centred near 22.9 degrees north, 113.8 degrees east, that is about 37 miles north-northwest of Tate's Cairn and was moving north-northwest at 8 knots.

The typhoon is expected to weaken as it moves inland and although winds over the Colony will become less violent in a few hours, gales will persist through most of the night. If the typhoon continues on its present track, it is likely that Local Storm Signal No. 10 will be replaced by No.6 in an hour or two.

6.00 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at midnight on 21 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.6 was hoisted at 11:45 p.m. which means that gale or storm force winds with mean speed 34 knots or more are expected from the southwest quarter.

Winds over the Colony have decreased slightly and this trend is expected to continue. Consequently, Local Storm Signal No.10 has been replaced by No.6. Winds near sea level are now of storm force and from the southwest.

At 11:30 p.m., Shirley was over land and had weakened into a severe tropical storm. It was centred near 23.0 degrees north, 113.8 degrees east, that is about 43 miles north-northwest of Tate's Cairn and was moving north-northwest at 8 knots away from the Colony.

Heavy rain will continue and another five inches or so are expected in the next twelve hours. Flooding and some landslides are probable.

6.64 inches of rainfall have been recorded at the Observatory since 7 p.m. yesterday.

Local Storm Warning issued at 00:30 a.m. on 22 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.6 is still hoisted which means that gale or storm force winds with mean speed 34 knots or more are expected from the southwest quarter.

Winds over the Colony are still of gale to storm force. Gusts of 74 knots have been recorded at Cape Collinson and Waglan Island.

At midnight, Severe Tropical Storm Shirley was centred near 23.1 degrees north, 113.8 degrees east, that is about 46 miles north-northwest of Tate's Cairn and was moving north-northwest at 8 knots away from the Colony.

Heavy rain will continue and another five inches or so are expected in the next twelve hours. Flooding and some landslides are probable.

6.05 inches of rainfall have been recorded at the Observatory since midnight yesterday.

Local Storm Warning issued at 1:30 a.m. on 22 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.6 is still hoisted which means that gale or storm force winds with mean speed 34 knots or more are expected from the southwest quarter.

At 1 a.m., Severe Tropical Storm Shirley was centred near 23.1 degrees north, 113.7 degrees east, that is about 50 miles northwest of Tate's Cairn and was moving north-northwest at 8 knots.

The storm has weakened slightly and winds over the Colony have continued to decrease. However gusts of 76 knots have been recorded at the Airport and 69 knots at Cheung Chau.

7.09 inches of rainfall have been recorded at the Observatory since 7 p.m. on the 20<sup>th</sup>.

Local Storm Warning issued at 2:30 a.m. on 22 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.6 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the southwest quarter.

Winds over the Colony are now slowly moderating but gales are still being reported. Gusts of 58 knots have been recorded at Cheung Chau and 52 knots at the Royal Observatory during the last hour.

At 2 a.m., Severe Tropical Storm Shirley was centred near 23.3 degrees north, 113.5 degrees east, that is about 70 miles north-northwest of Hong Kong and was moving north-northwest at 15 knots. The Royal Observatory radar showed that the eye of Severe Tropical Storm Shirley was only 15 miles in diameter but the rain area associated with the storm was still extensive. If the storm continues on its present track, it is likely that Local Storm Signal No.6 will be replaced

by No.3 in the next few hours.

7.49 inches of rainfall have been recorded at the Observatory since 7 p.m. on the 20<sup>th</sup>.

Local Storm Warning issued at 3:30 a.m. on 22 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.6 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the southwest quarter.

Winds over the Colony are now slowly moderating but gales are still being reported in exposed places. Gusts of 52 knots have been recorded at Cheung Chau and 50 knots at Cape Collinson and Waglan Island.

At 3 a.m., Severe Tropical Storm Shirley was centred near 23.5 degrees north, 113.3 degrees east, that is about 85 miles north-northwest of Hong Kong and was moving north-northwest at 15 knots.

The storm has weakened slightly and if it continues on its present track, it is likely that local storm signal No.6 will be replaced by No.3 within the next two or three hours.

7.60 inches of rainfall have been recorded at the Observatory since 7 p.m. on the 20<sup>th</sup>.

Local Storm Warning issued at 4:30 a.m. on 22 August 1968 by the Royal Observatory.

Local Storm Warning Signal No.6 is still hoisted, which means that gale or storm force winds with mean speed 34 knots or more are expected from the southwest quarter.

Winds over the Colony are now slowly moderating but gales are still being reported in exposed places. Gusts of 60 knots have been recorded at Tate's Cairn and 50 knots at Cheung Chau.

At 4 a.m., Shirley had weakened into a tropical storm and was centred near 23.7 degrees north, 113.2 degrees east, that is about 100 miles north-northwest of Hong Kong and was moving north-northwest at 15 knots.

The storm has weakened slightly and if it continues on its present track, it is likely that Local Storm Signal No. 6 will be replaced by No. 3 within the next two hours.

8.13 inches of rainfall have been recorded at the Observatory since 7 p.m. on the 20<sup>th</sup>.

## Notes:

- (i) The Hong Kong Observatory was known as the Royal Observatory, Hong Kong during the period from July 1912 to 30 June 1997.
- (ii) Starting from 1 January 1973, signals 5 to 8 were replaced by 8 NW, 8 SW, 8 NE and 8 SE respectively.