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ATLAS

OF

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20. DISTRIBUTION STATEMENTS (Continue on reverse side if necessary and identify by block number) This atlas contains monthly charts compiled from observations made by hydrographic observers of the Hydrographic Office to and including the year 1940. The Hydrographic Office has all information from its files			

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160°

150°

140°

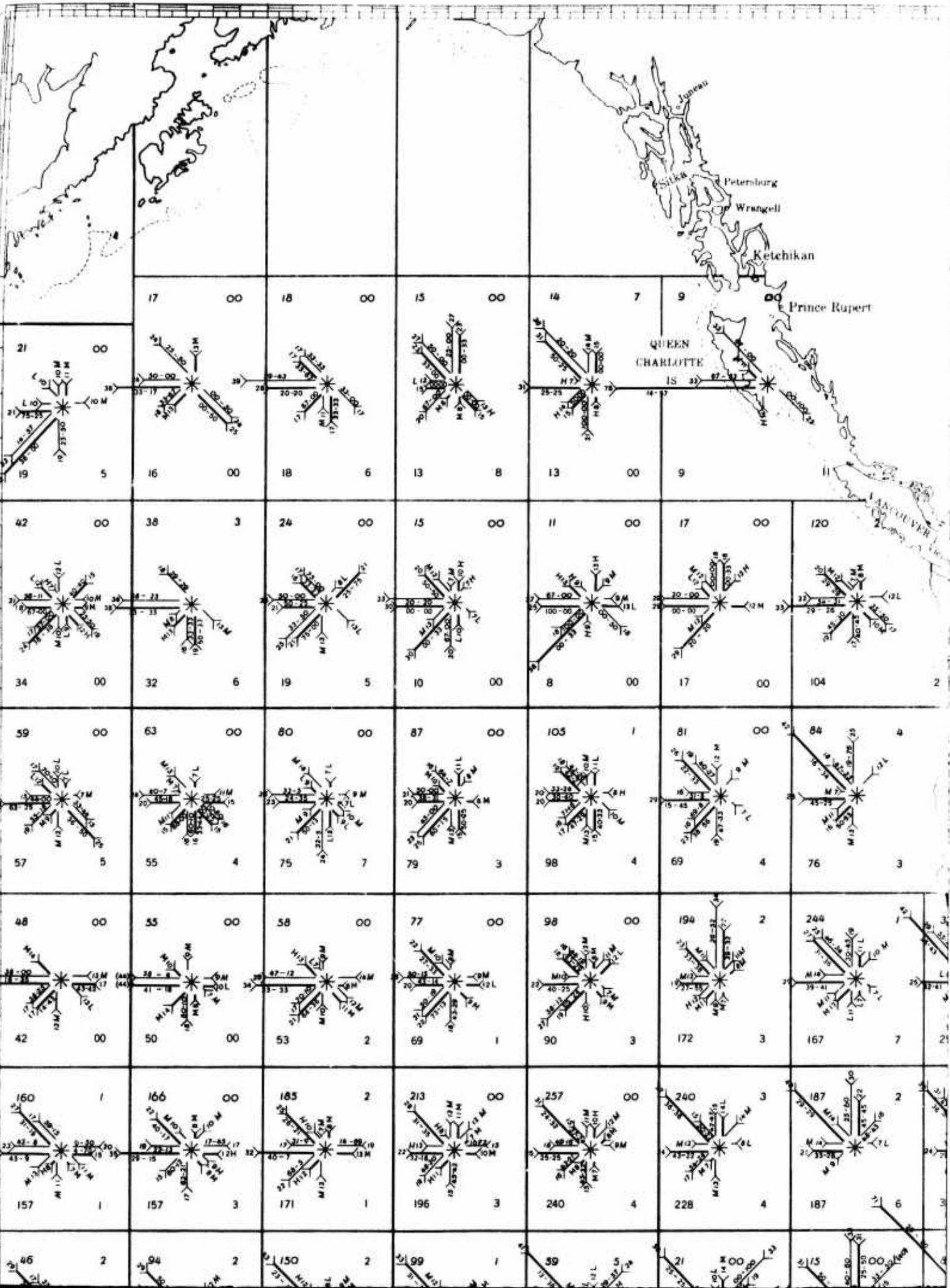
130°

60

50

40

30





NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

JANUARY

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

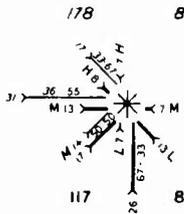
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or toward the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 6, the conditions within the direction are shown, by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

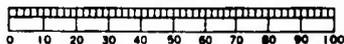
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:

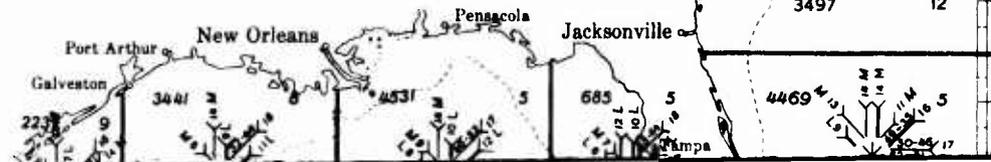


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 23 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 28 percent were from the south of which 33 percent were medium and 67 percent were low; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



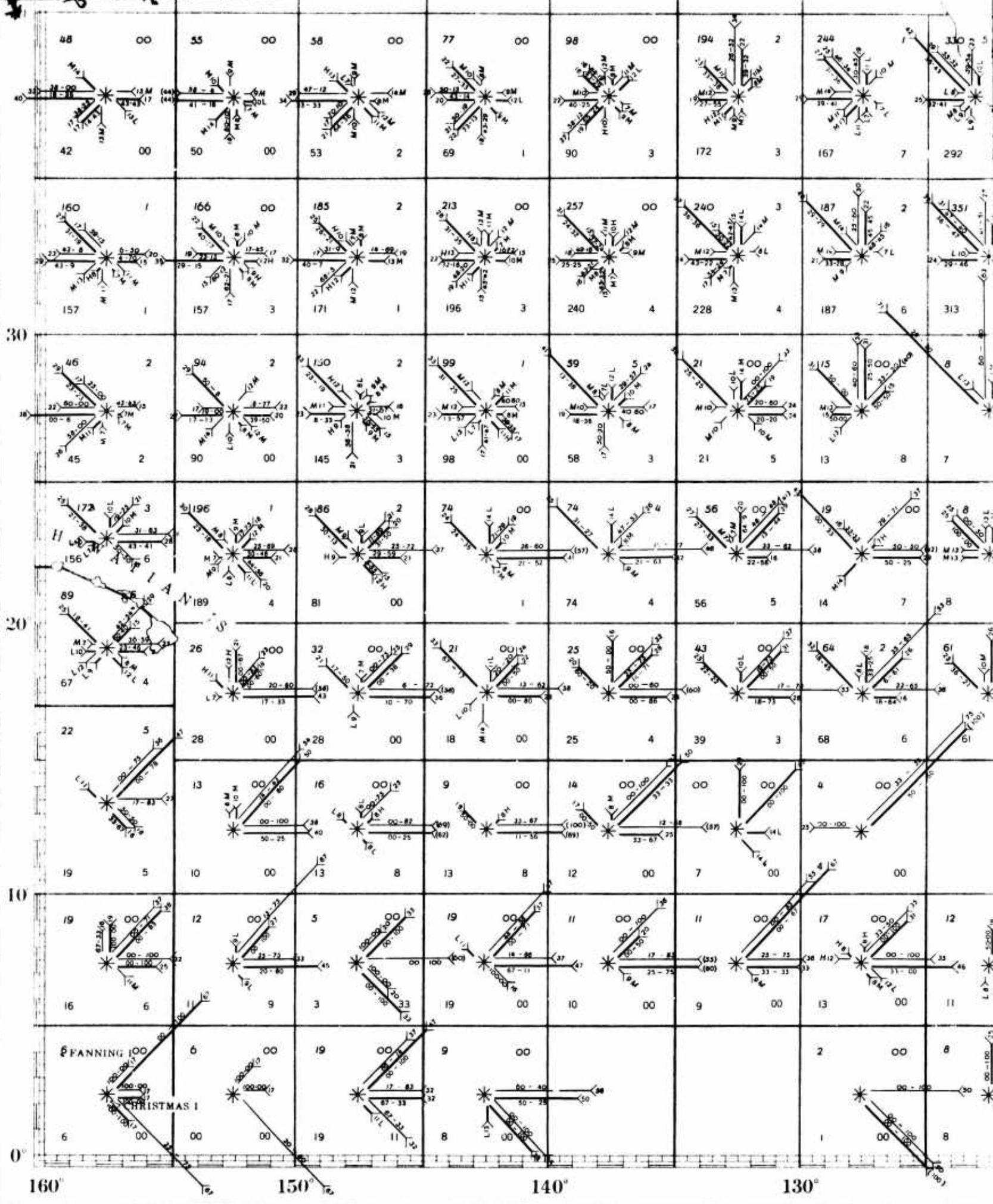
SCALE OF SEA OR SWELL PERCENTAGES



50

40

30°



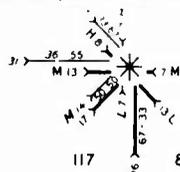
160°

150°

140°

130°

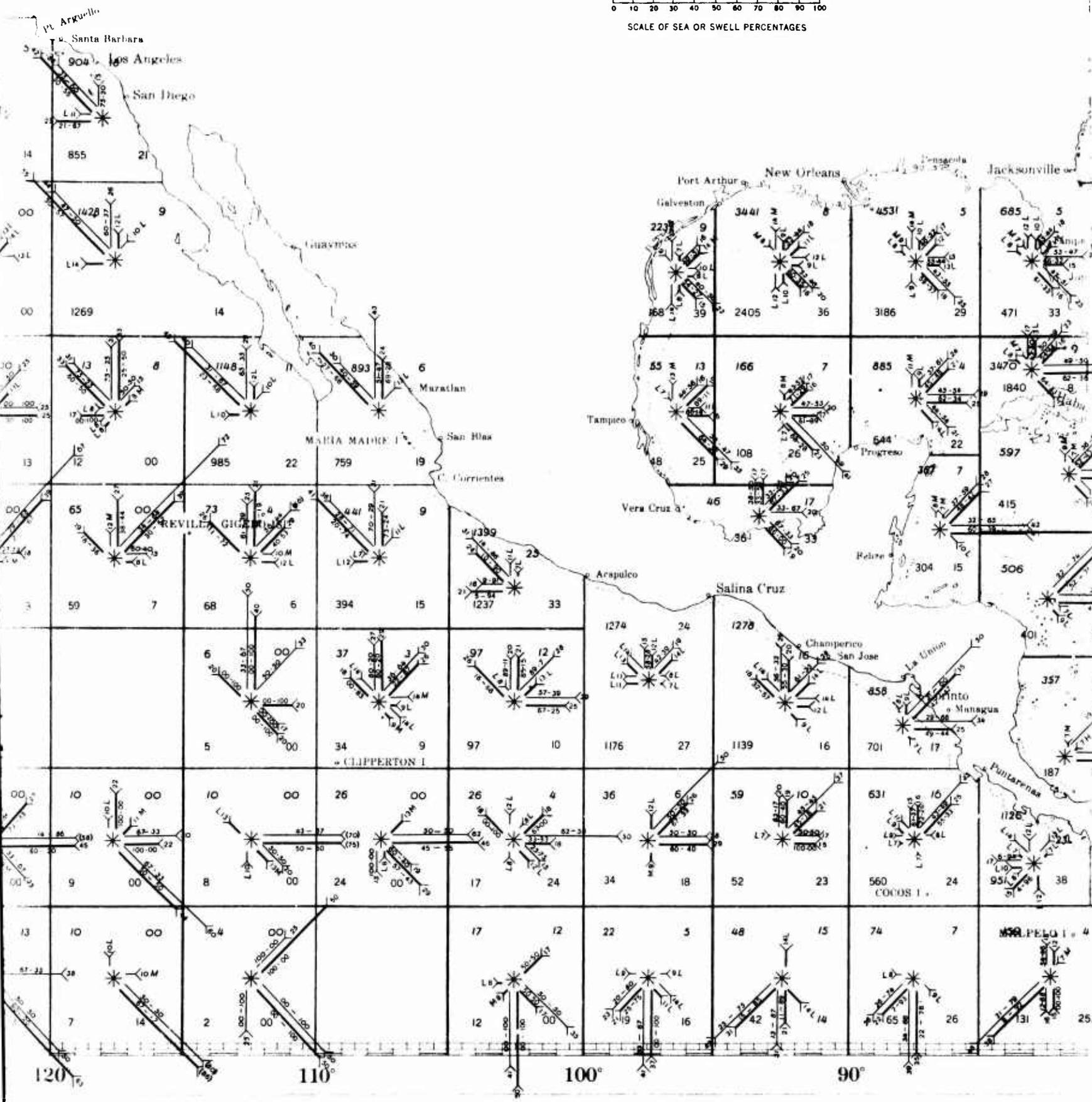
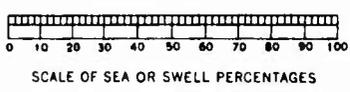
4



14 percent were from the west and predominately medium; 31 percent were from the west, of which 66 percent were low and 39 percent were medium; 17 percent were from the northwest, of which 87 percent were low and 88 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 18 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 80 percent were low and 80 percent were medium; 18 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

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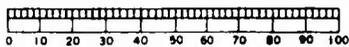


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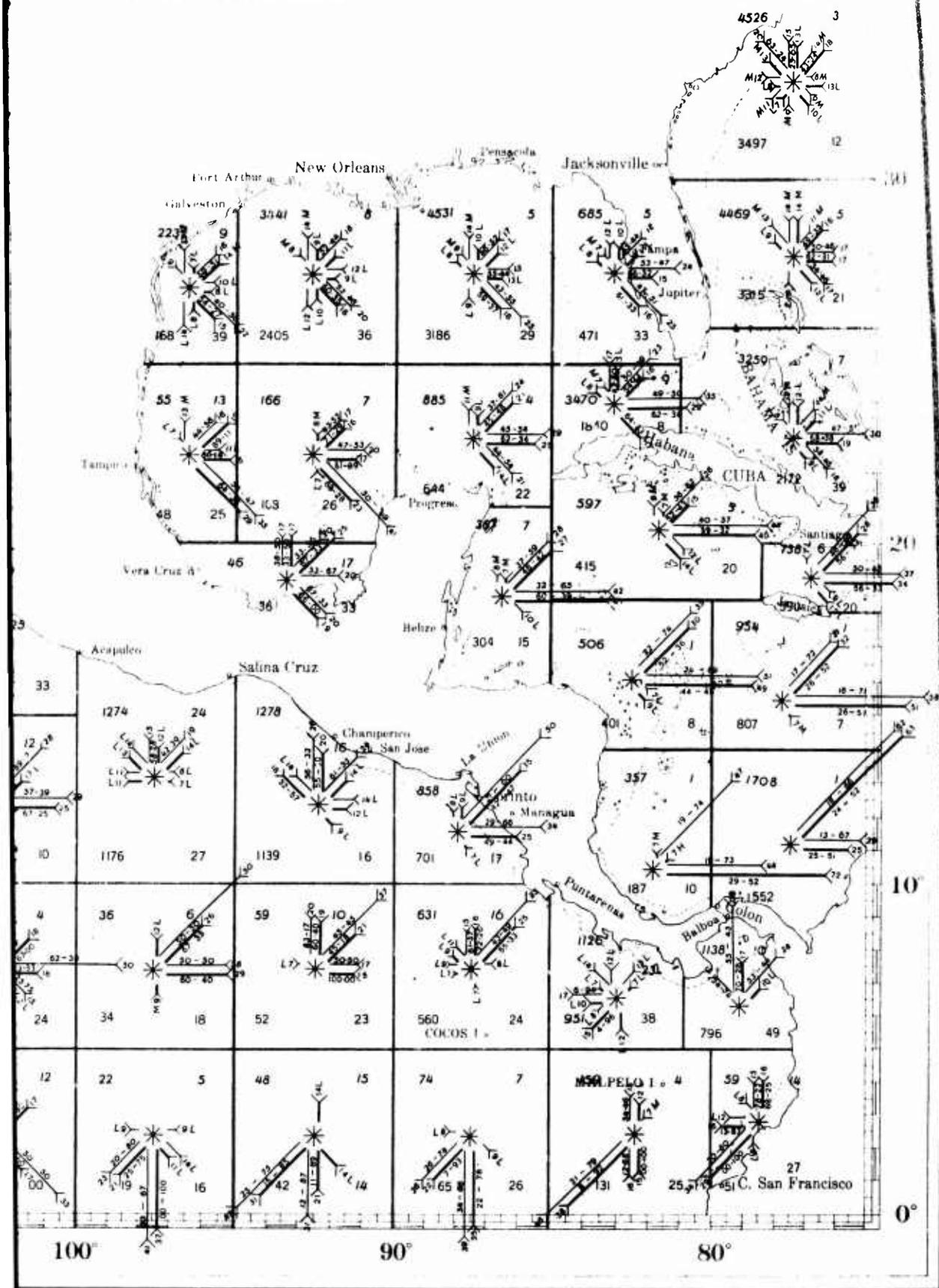
41 percent were from the west, of which 66 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 80 percent were low and 20 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

ANNOUNCE



SCALE OF SEA OR SWELL PERCENTAGES



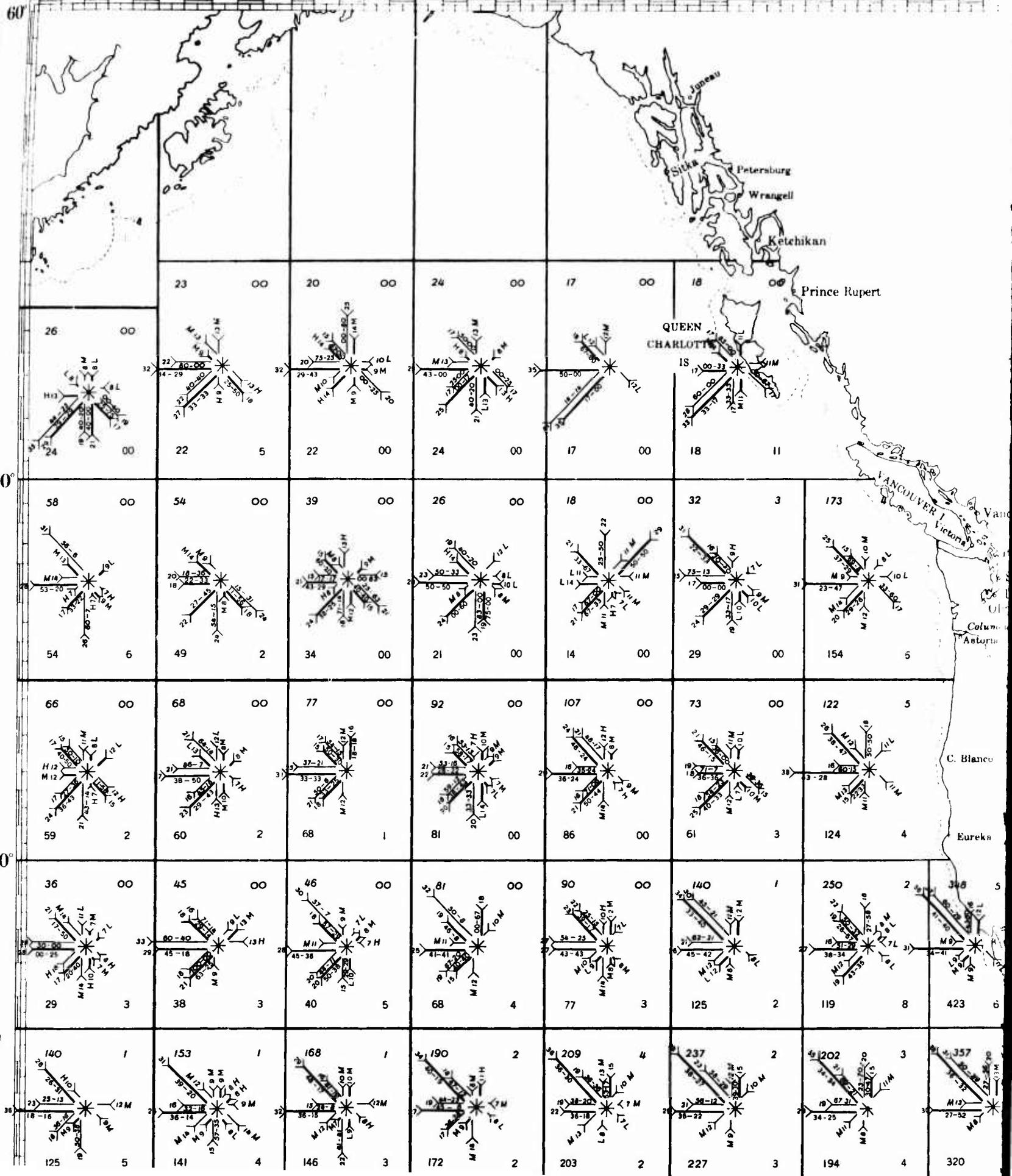
6

160°

150°

140°

130°



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHARTS

FEBRUARY

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE

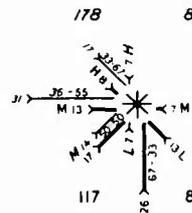
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 7, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

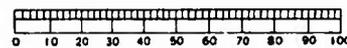
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows



Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium, 31 percent were from the west, of which 55 percent were low and 26 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium, 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium, 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium, 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

2



90°

80°

60



NORTH PACIFIC OCEAN SEAS AND SWELL CHARTS

FEBRUARY

WINDING SEAS, SWELLS AND CALMS

Report has been compiled from observations made during the month by the cooperating vessels and including the year 1942, the majority of the observations having been taken during the month of February.

The Hydrographic Office has shown all information in its files, however slight, and observations are small the graphical presentation will convey a false impression unless the reliability of the information for any given area consider the number of observations percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEAS AND SWELLS ARE SHOWN ON THIS CHART AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THIS CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE CONDITIONS FOR SEAS AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE SHOWN AT ANY GIVEN TIME OR PLACE.

50

METHOD OF PRESENTATION

Seas and swells are shown both graphically and with figures, by means of an eight point double rose, printed roses that have prevailed within the areas outlined on the brown base. THE SEAS AND SWELLS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE DIRECTIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown if the number of observations in any direction is less than 7. In instances where the number of observations in any direction is less than 7, the conditions within that direction may be shown in the usual manner in the directions toward which the seas or swells move. The length of the arrow is placed on the attached scale and the numeral at the tail of the arrow, gives the percent that the seas or swells have been moving from or near the given point. In instances where the shaft is shortened as much as necessary and the true percent at the tail of the arrow is shown.

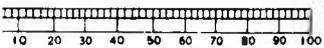
For example - The conditions within the direction are shown along the shaft of the arrow or swells, the first figure from the center is always the percent of low. The percent of medium is the remainder of the percentage. When the percent of direction is less than 7, the direction are shown by the letter L, M, H (meaning predominately low, medium or high) figures for direction. The conditions of seas and swells (low, medium and high) follows: low seas or swells, those of amounts 1 and 2, medium seas or swells, those of amounts 3 and 4, and high seas or swells, those of amounts 5 and above.

Sea is shown in the upper left hand corner of the area and the percent of calms in the lower left hand corner. The number of observations for swell is shown in the lower left hand corner and the number of observations for calms in the lower right hand corner.

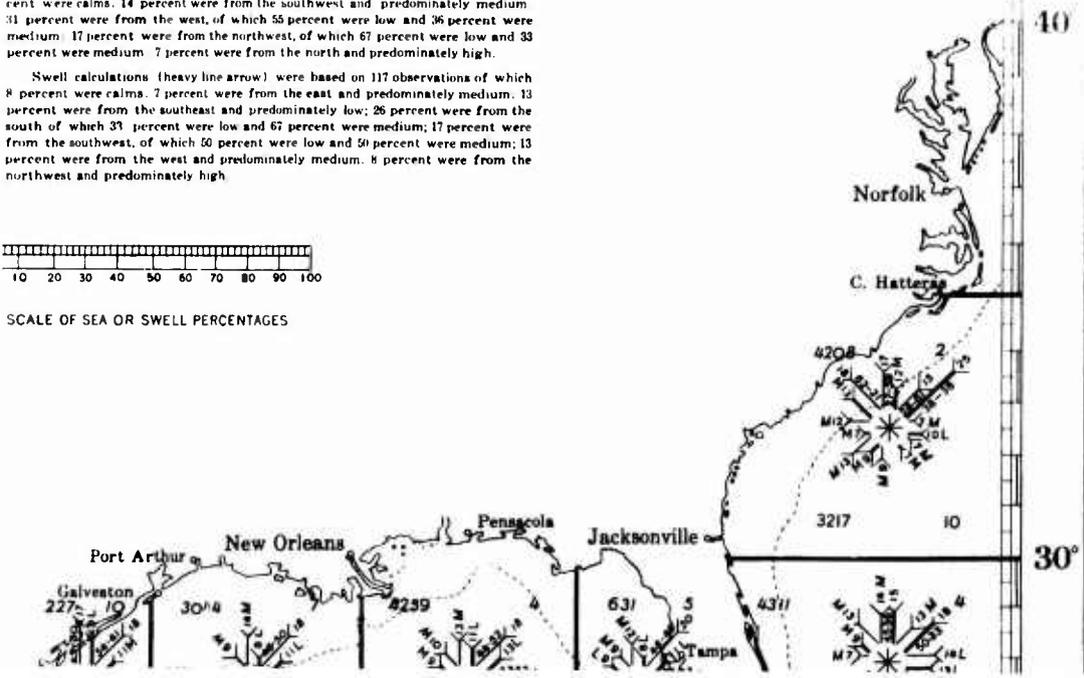
For example - The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium, 31 percent were from the west, of which 55 percent were low and 36 percent were medium, 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium, 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium, 13 percent were from the southeast and predominately low; 26 percent were from the south of which 31 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium, 8 percent were from the northwest and predominately high.



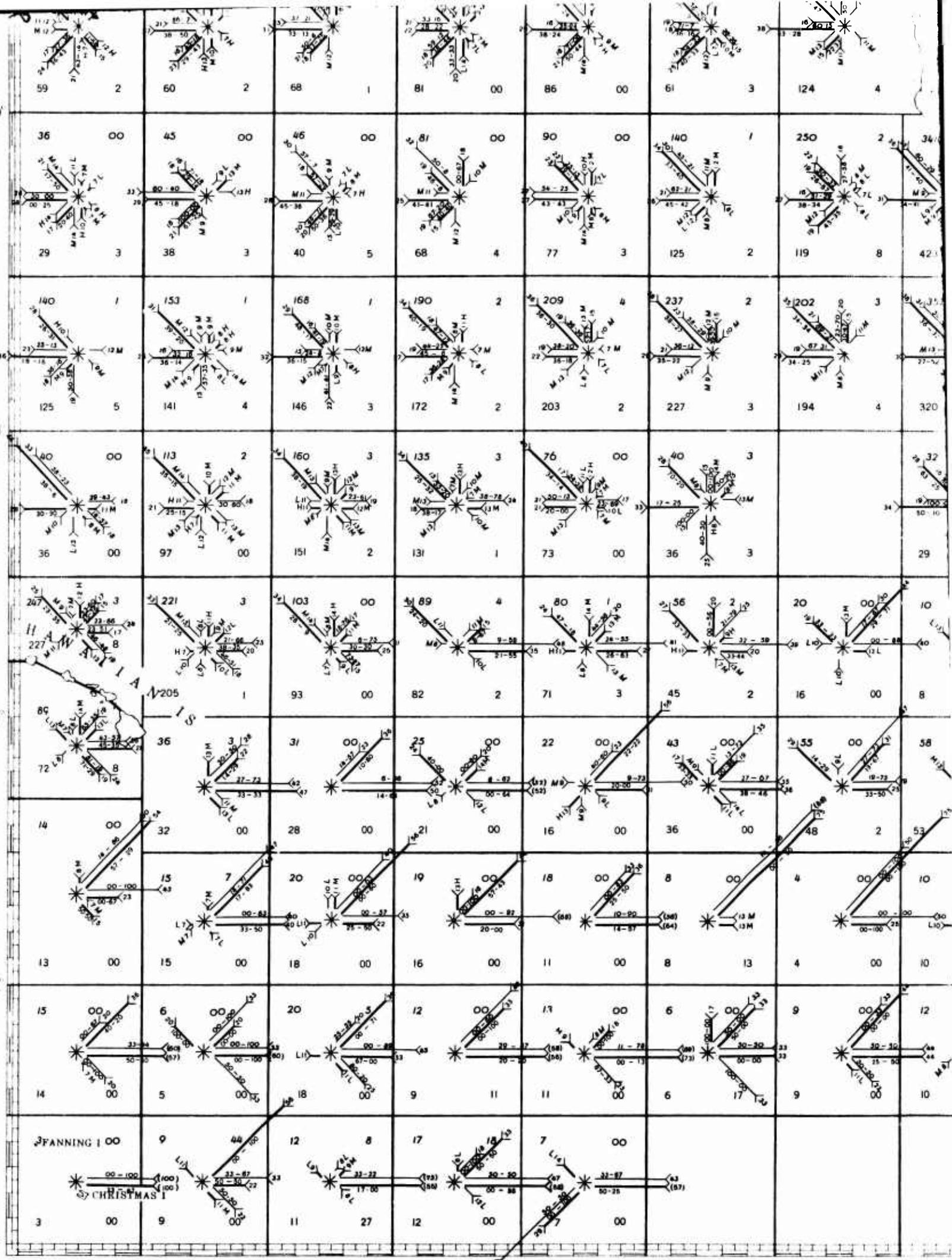
SCALE OF SEA OR SWELL PERCENTAGES



40

30°

40
30
20
10
0°



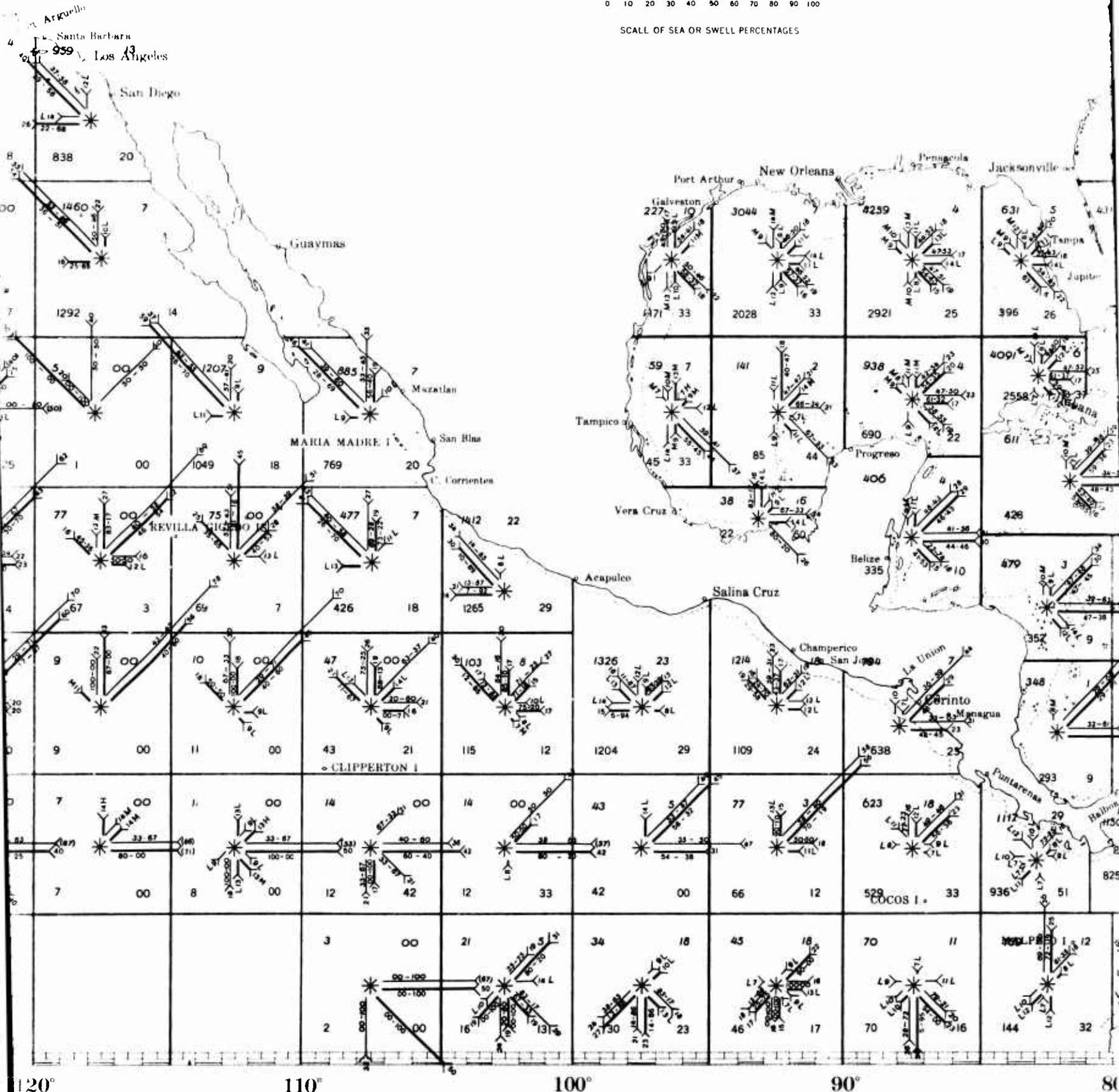
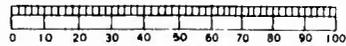
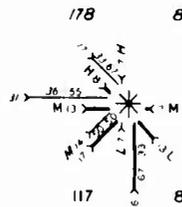
160° 150° 140° 130°

Amounts of high sea or swells, those of amount 4 and above.
 The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example: The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium, 31 percent were from the west, of which 55 percent were low and 36 percent were medium, 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium, 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium, 11 percent were from the southeast and predominately low, 26 percent were from the south, of which 33 percent were low and 67 percent were medium, 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium, 13 percent were from the west and predominately medium, 8 percent were from the northwest and predominately high.



120° 110° 100° 90° 80°

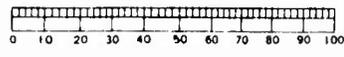
5

Observations for sea are shown in the upper left hand corner of the area and the percent of calms for the upper right hand corner. The number of observations for swell is shown in the lower left hand corner and the percent of calms for those observations in the lower right hand corner.

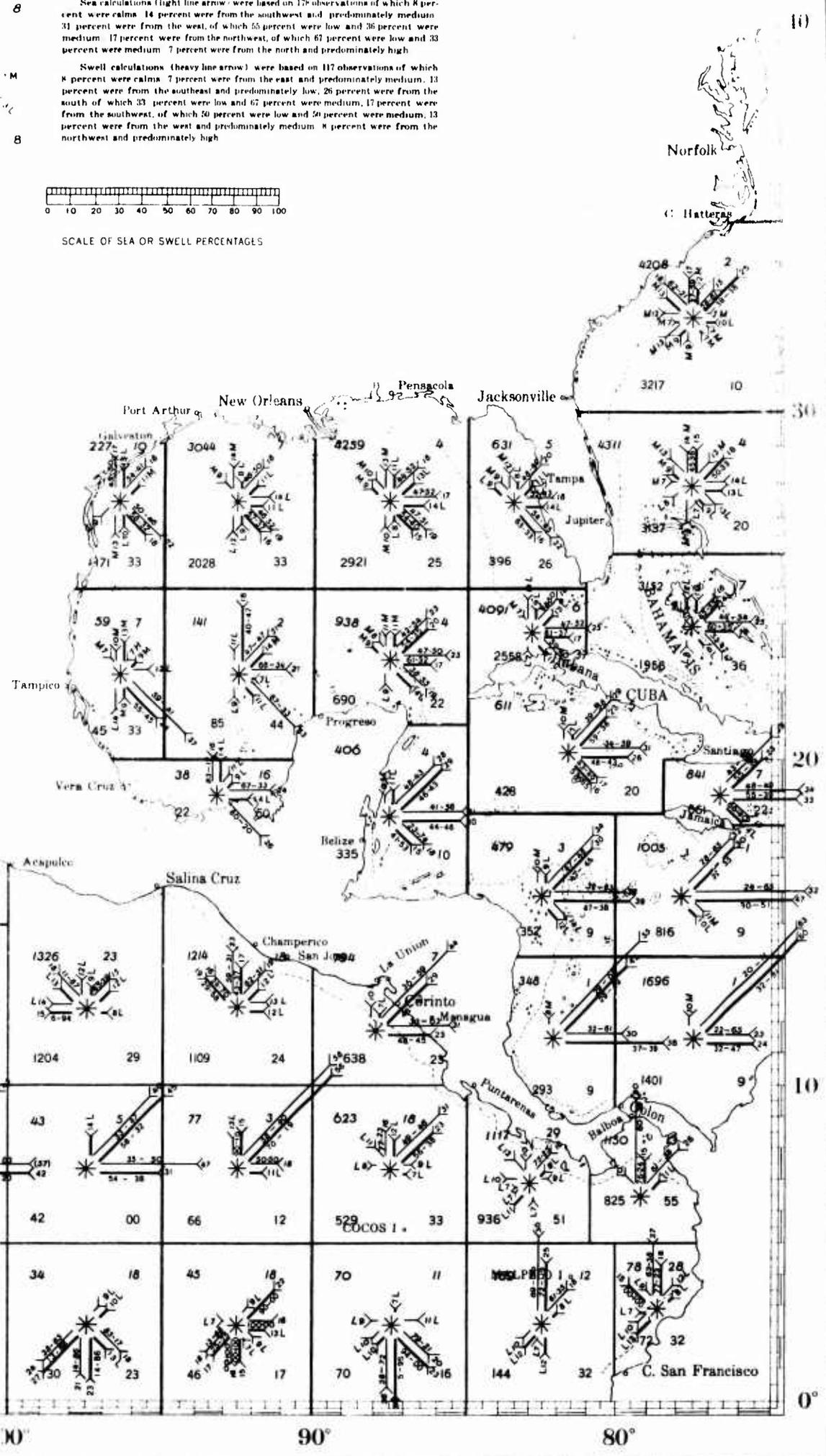
For example: The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 17 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium, 31 percent were from the west, of which 55 percent were low and 36 percent were medium, 17 percent were from the northwest, of which 61 percent were low and 33 percent were medium, 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium, 13 percent were from the southeast and predominately low, 26 percent were from the south of which 33 percent were low and 67 percent were medium, 17 percent were from the southwest, of which 50 percent were low and 30 percent were medium, 13 percent were from the west and predominately medium, 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



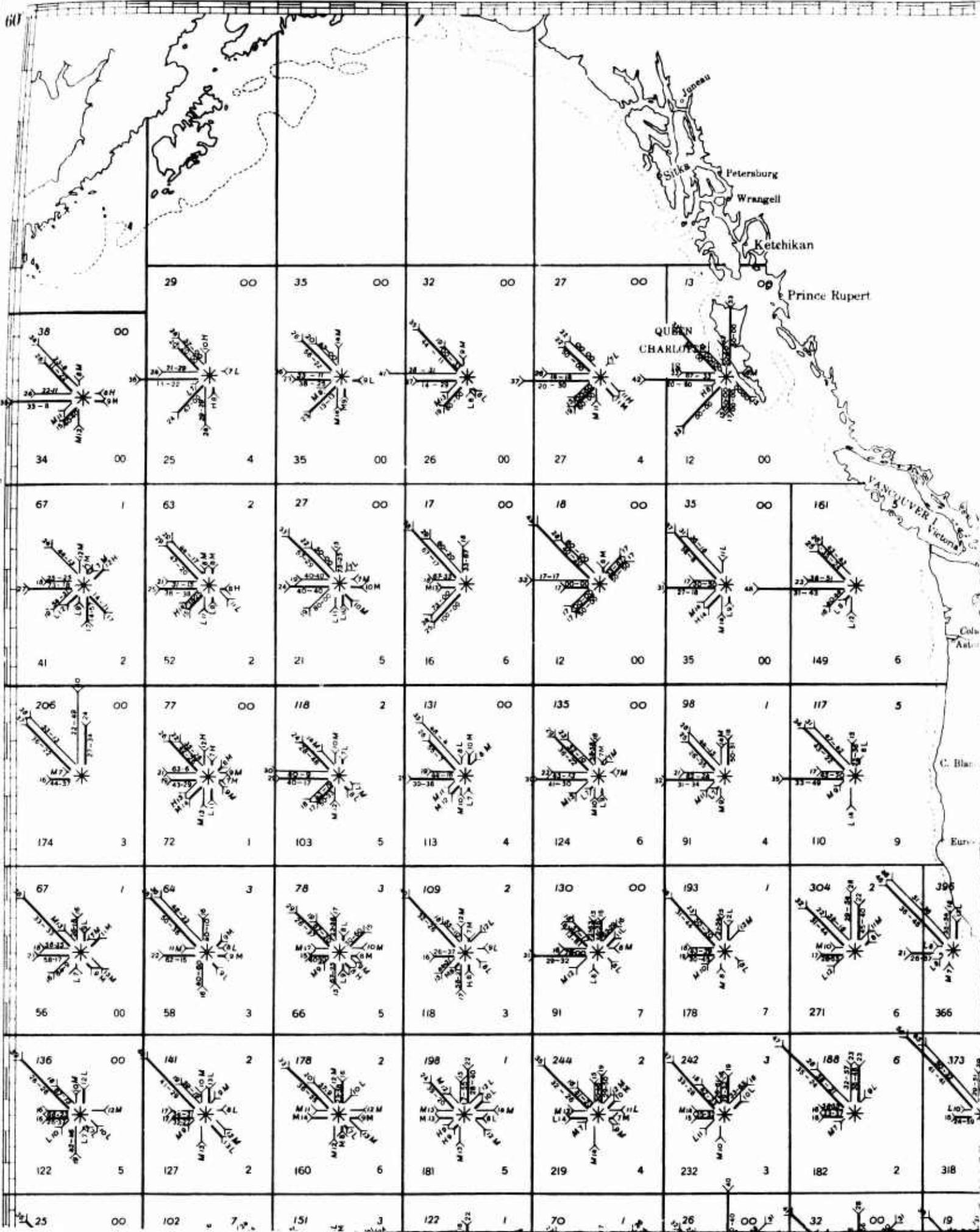
6

160°

150°

140°

130°



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

MARCH

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE

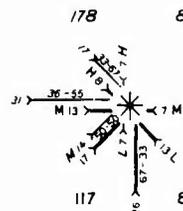
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 8, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

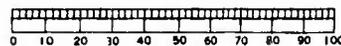
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:

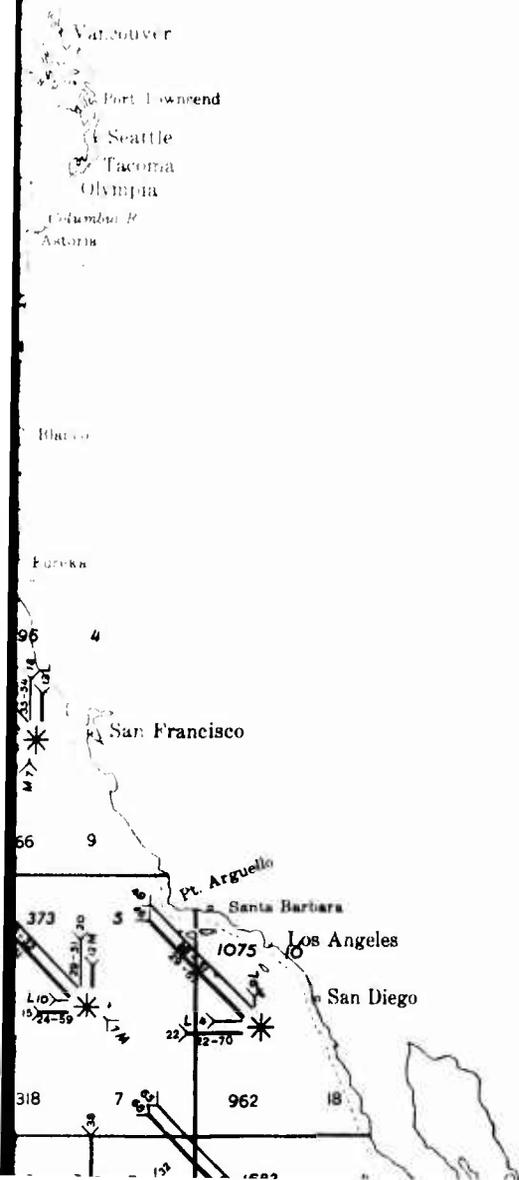


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES





EASTERN PACIFIC OCEAN SEA AND SWELL CHART

MARCH

PREVAILING SEAS, SWELLS AND CALMS

shown on this chart has been compiled from observations made during the month by the cooperating Hydrographic Office to and including the year 1942, the majority of the observations having been taken from 1902 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and the number of observations is small the graphical presentation will convey a false impression unless by. In evaluating the reliability of the information for any given area consider the number of observational position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL ARE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THIS CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE CONDITIONS FOR SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE IDENTICAL AT ANY GIVEN TIME OR PLACE

METHOD OF PRESENTATION

This chart is to show both graphically and with figures, by means of an eight-point double rose, printed in brown, the direction of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEAS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELLS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown if the percent of direction is less than 7. In instances where the number of observations in any direction is less than 15, the conditions within that direction may be shown in the usual manner. The arrows point in the directions toward which the seas or swells move. The length of the arrow from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the percent of observations that the seas or swells have been moving from or near the given point. In instances where the percent cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

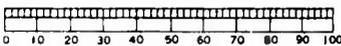
If the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow. For seas and swells, the first figure from the center is always the percent of low. The percent of medium is the remainder of the percentage. When the percent of direction is less than 15, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium, and high). The percentage figures for seas and swells (low, medium and high) are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for sea in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner and the percent of calms for those observations in the lower right hand corner.

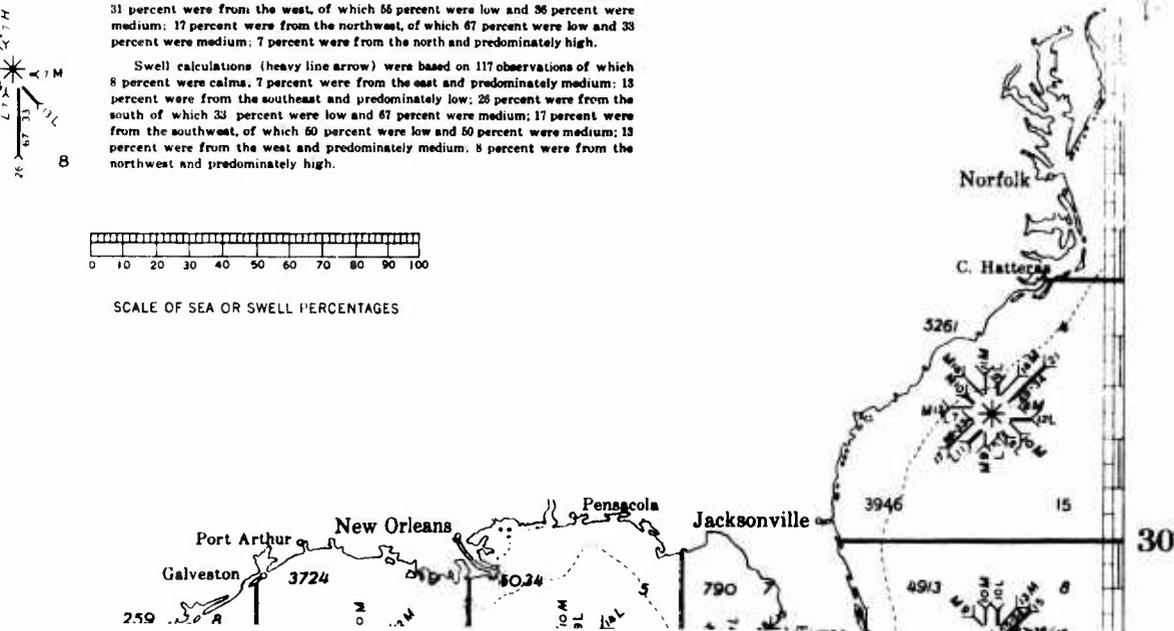
For example—The attached rose should be read as follows:

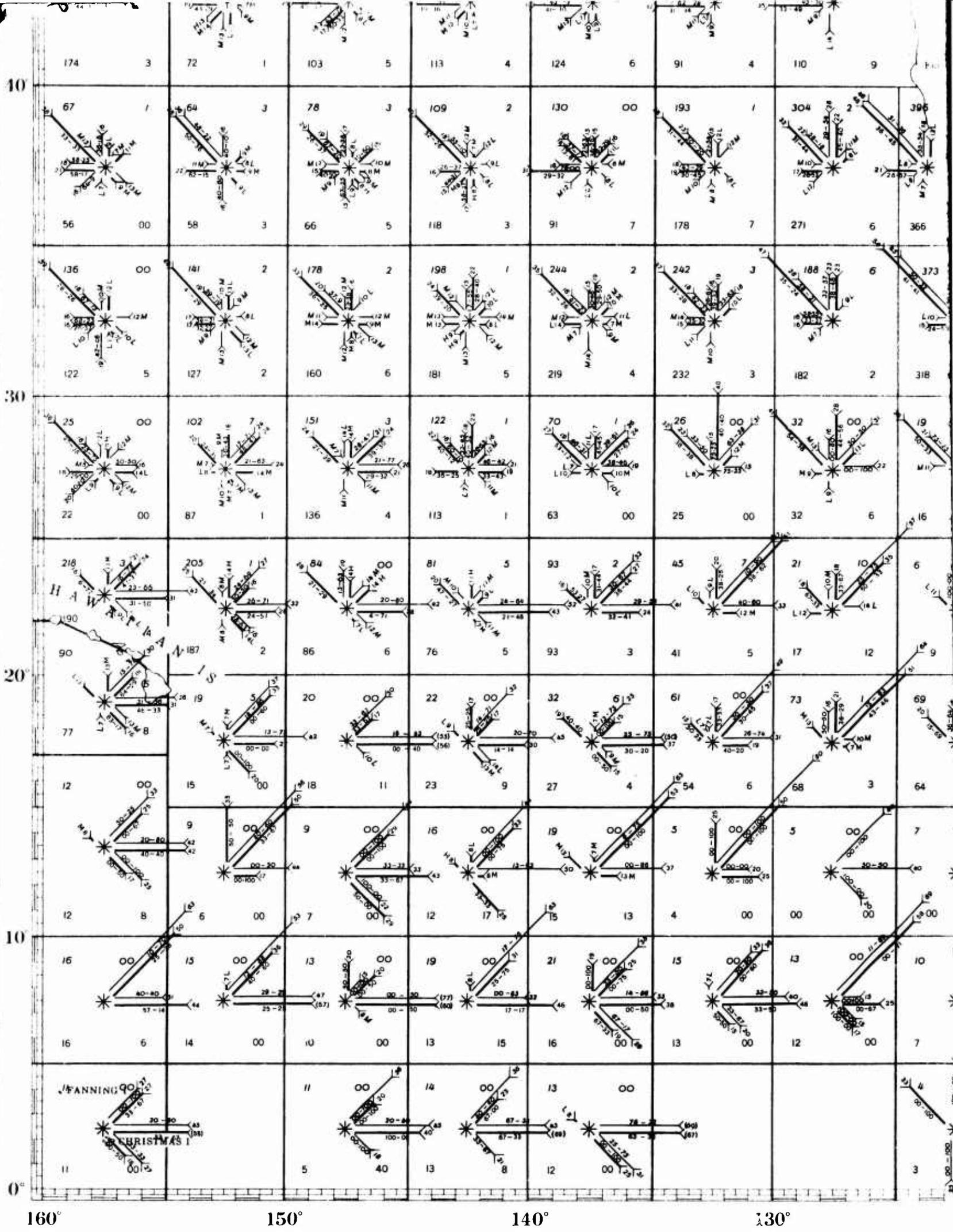
8 Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

8 Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south, of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES





160°

150°

140°

130°

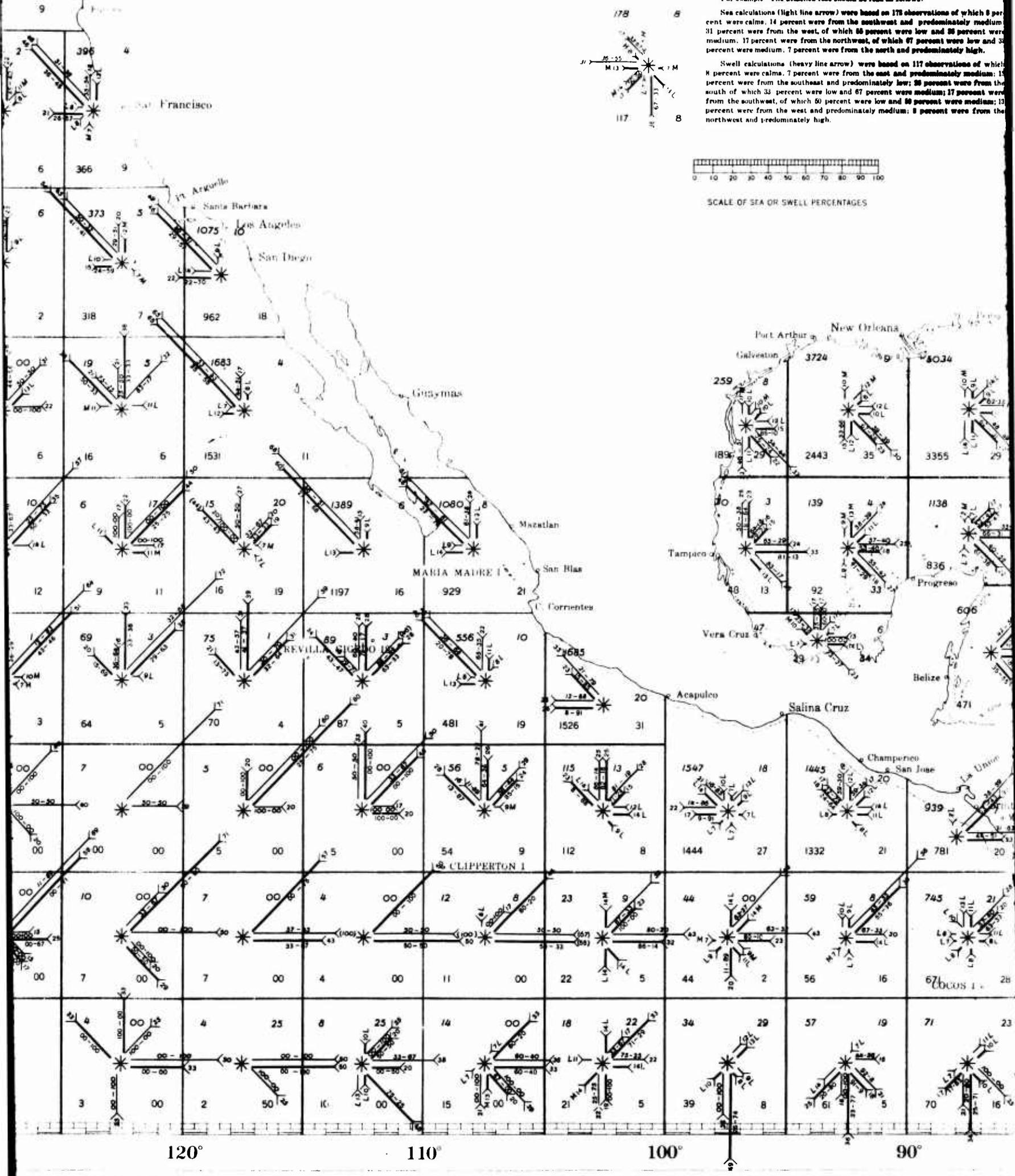
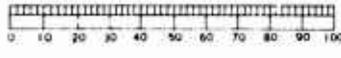
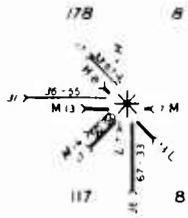
4

The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example - The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 86 percent were low and 86 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 32 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 16 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



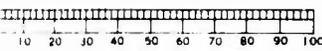
5

shown in the upper left hand corner of the area and the percent of calm. The number of observations for swell is shown in the lower left hand corner for those observations in the lower right hand corner.

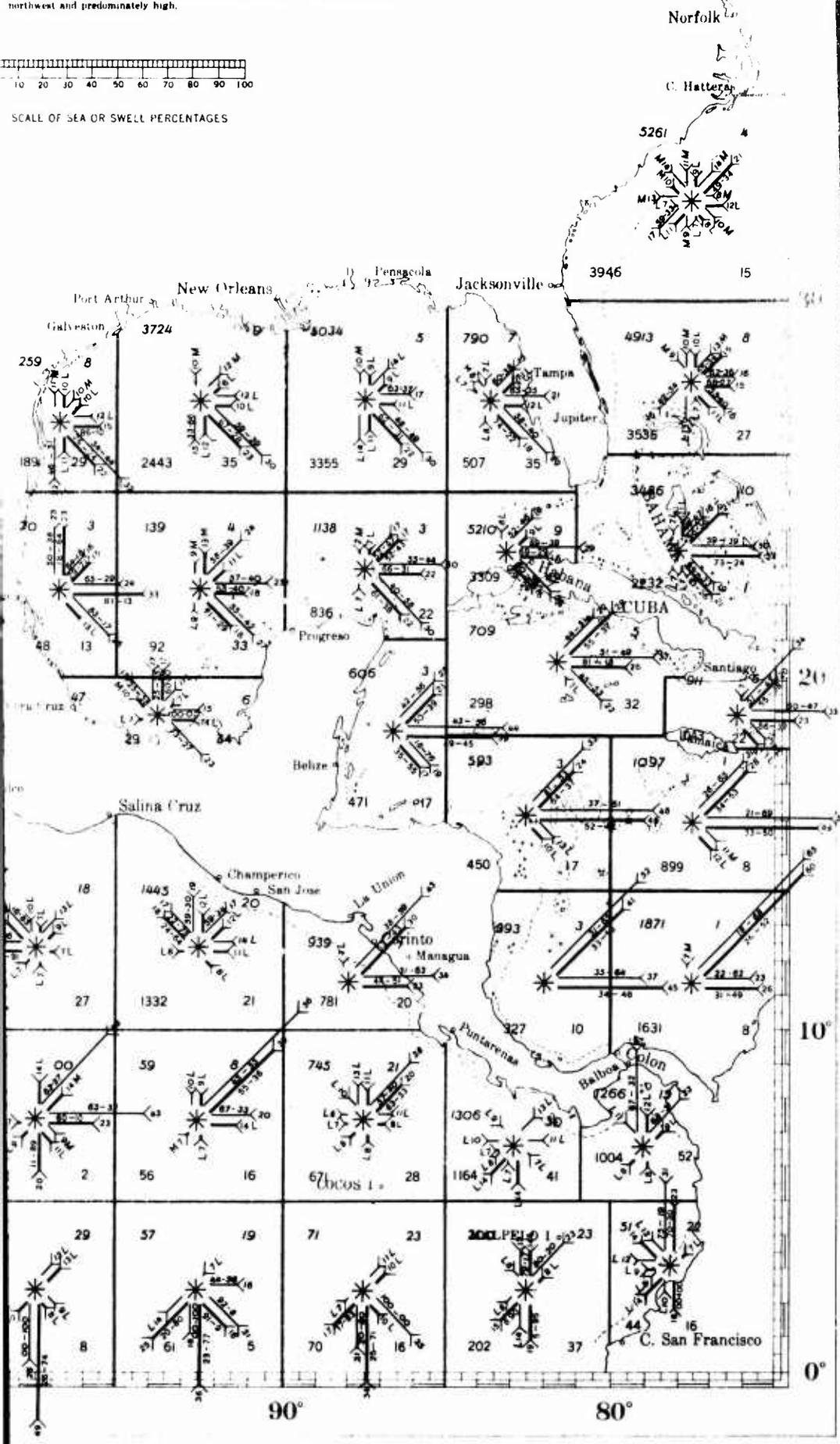
For example - The attached rose should be read as follows

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium. 31 percent were from the west, of which 56 percent were low and 38 percent were medium. 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium. 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 28 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium. 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



6



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

APRIL

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

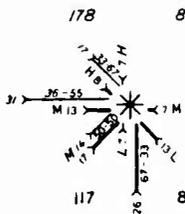
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 5, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas or swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

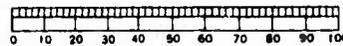
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows

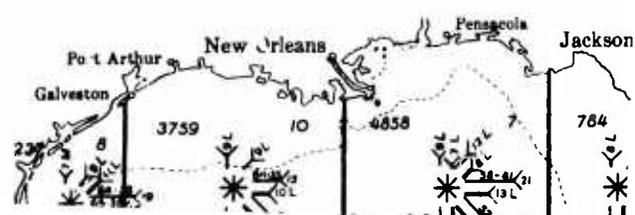
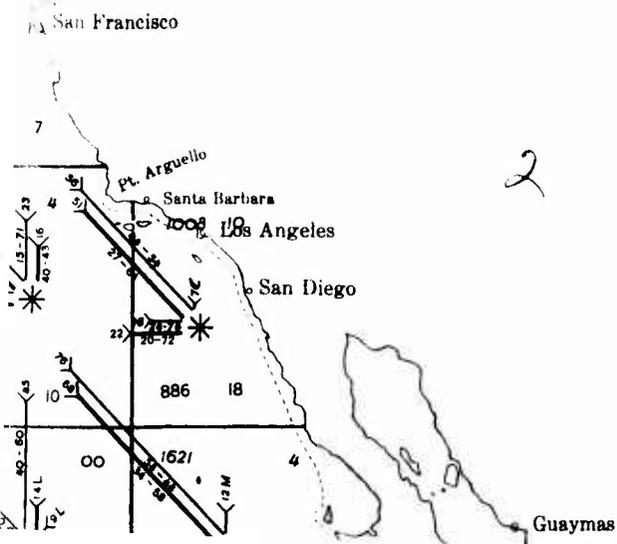


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 65 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES





EASTERN PACIFIC OCEAN SEA AND SWELL CHART

APRIL

RAILING SEAS, SWELLS AND CALMS

This chart has been compiled from observations made during the month by the cooperating vessels and including the year 1942, the majority of the observations having been taken by the Hydrographic Office. The Hydrographic Office has shown all information in its files, however slight, and observations in small the graphical presentation will convey a false impression unless the reliability of the information for any given area consider the number of observations and percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL ARE SHOWN SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN FOR CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE CONDITIONS AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE THE SAME AT ANY GIVEN TIME OR PLACE.

50

METHOD OF PRESENTATION

The sea and swell are shown both graphically and with figures, by means of an eight point double rose, printed on a brown base. THE SEA IS INDICATED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL IS INDICATED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown if the number of observations in any direction is less than 7. In instances where the number of observations in any direction is less than 7, the conditions within that direction may be shown in the usual manner in the directions toward which the seas or swells move. The length of the arrow is placed on the attached scale and the numeral at the tail of the arrow, gives the percent that the seas or swells have been moving from or near the given point. In instances where the percent is not shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow.

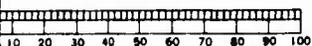
For example, the conditions within the direction are shown along the shaft of the arrow or swells, the first figure from the center is always the percent of low. The percent of medium is the remainder of the percentage. When the percent of direction is less than 7, the conditions are shown by the letter L, M, or H (meaning predominately low, medium, or high) for direction. The conditions of seas and swells (low, medium and high) are shown by the figures for direction. The conditions of seas and swells (low, medium and high) are shown by the figures for direction. The conditions of seas and swells (low, medium and high) are shown by the figures for direction.

Calms are shown in the upper left hand corner of the area and the percent of calms for the area is shown in the lower left hand corner. The number of observations for swell is shown in the lower right hand corner for those observations in the lower right hand corner.

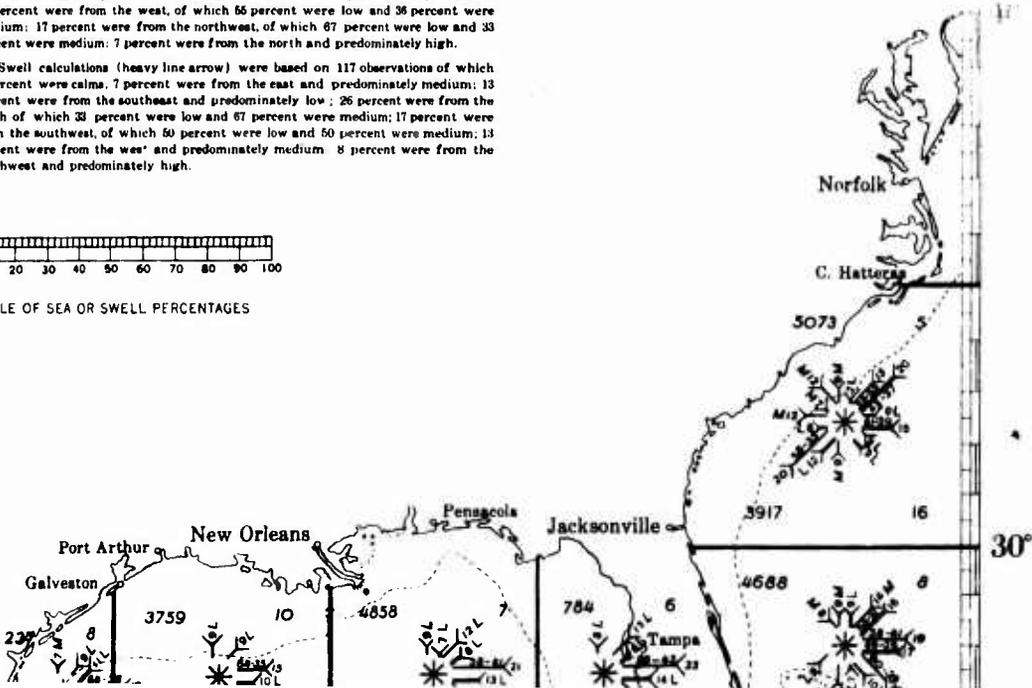
For example—The attached rose should be read as follows

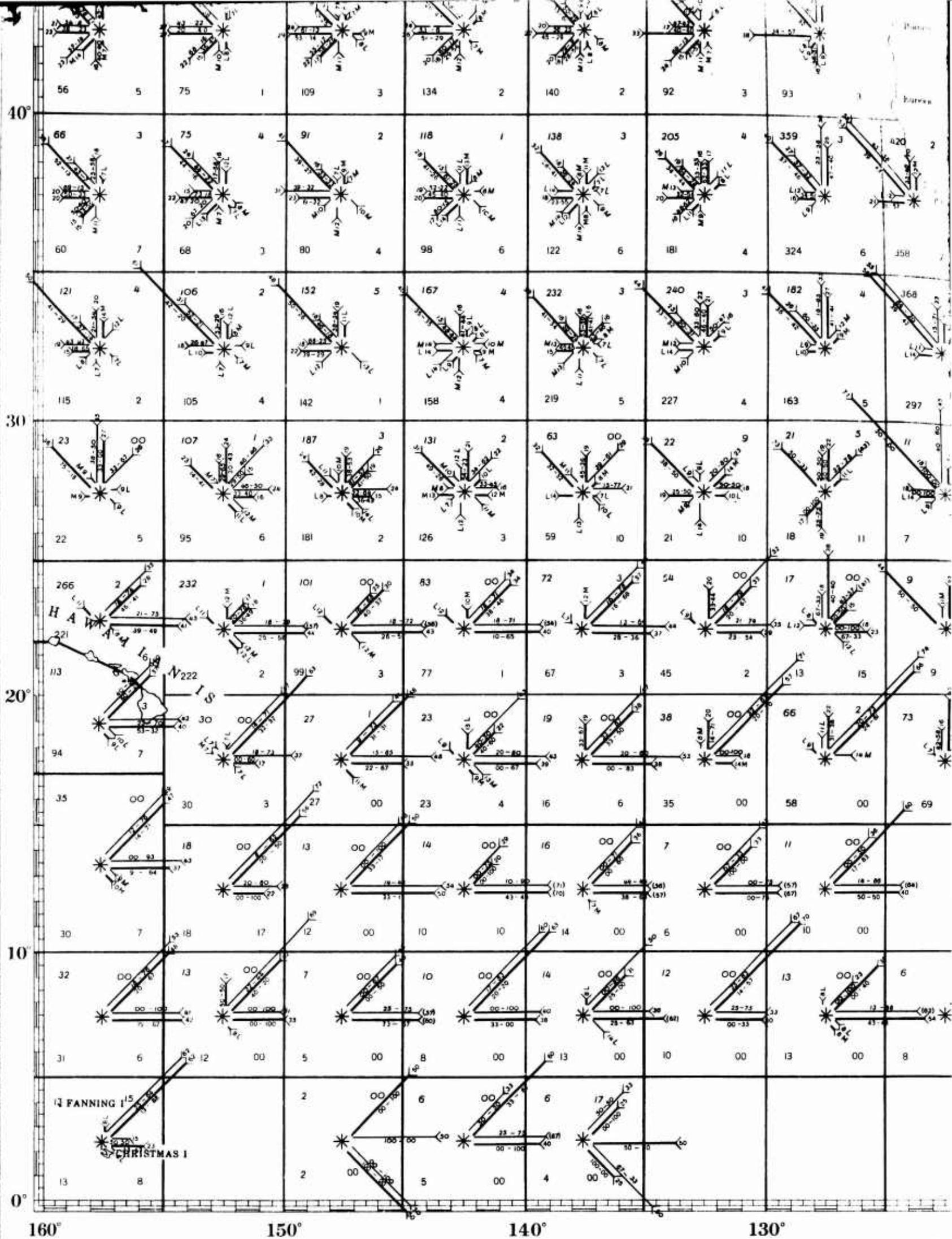
Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

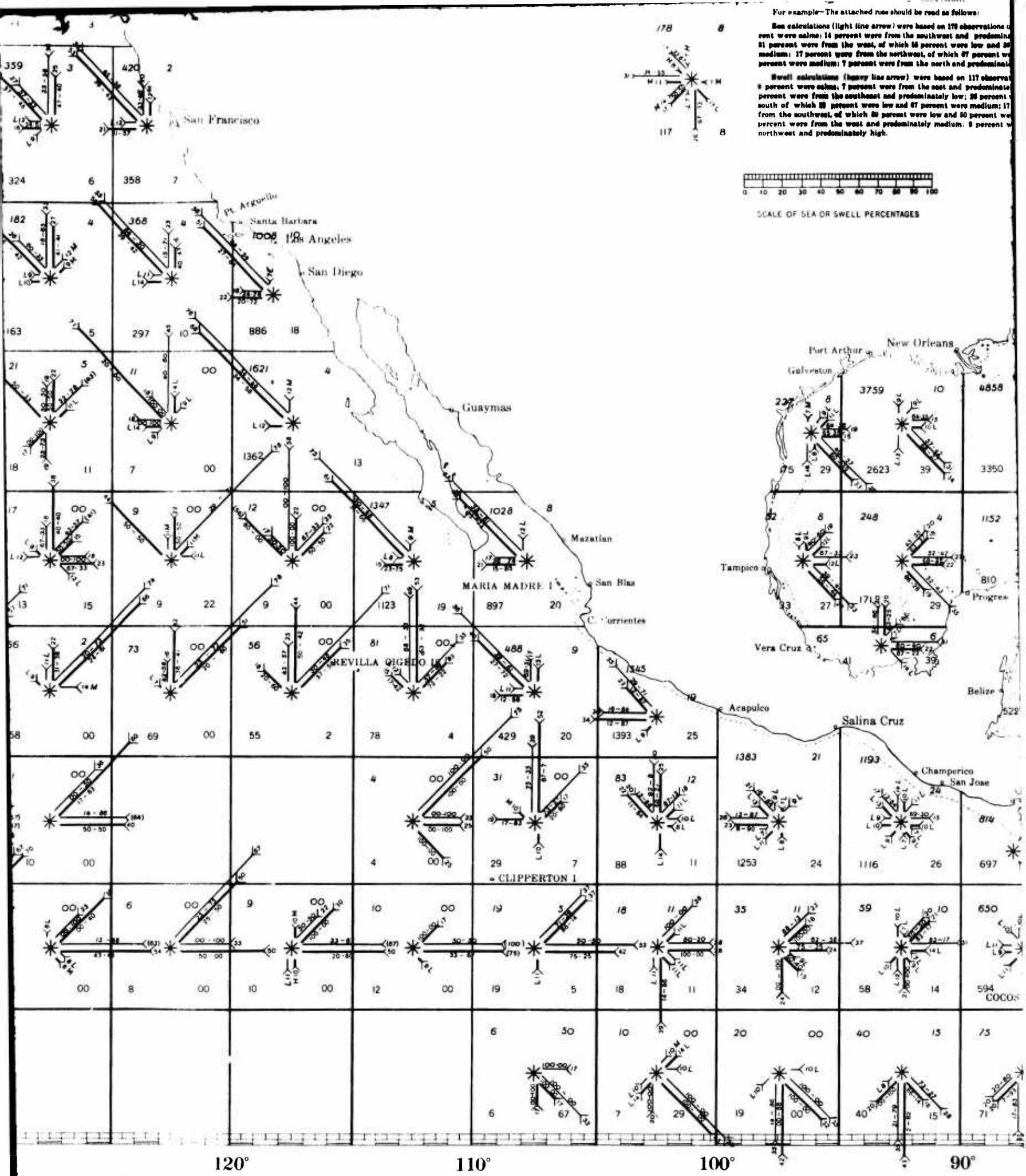
Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



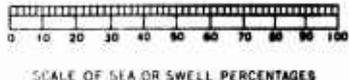
SCALE OF SEA OR SWELL PERCENTAGES







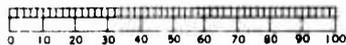
For example—The attached rose should be read as follows:
 Sea calculations (light line arrow) were based on 178 observations of which 14 percent were from the southwest and predominately low; 51 percent were from the west, of which 16 percent were low and 35 percent medium; 17 percent were from the northwest, of which 87 percent were medium; 7 percent were from the north and predominately low.
 Swell calculations (heavy line arrow) were based on 117 observations of which 7 percent were from the east and predominately low; 86 percent were from the southeast and predominately low; 86 percent south of which 80 percent were low and 17 percent were medium; 17 percent from the southwest, of which 80 percent were low and 20 percent were medium; 8 percent were from the northwest and predominately high.



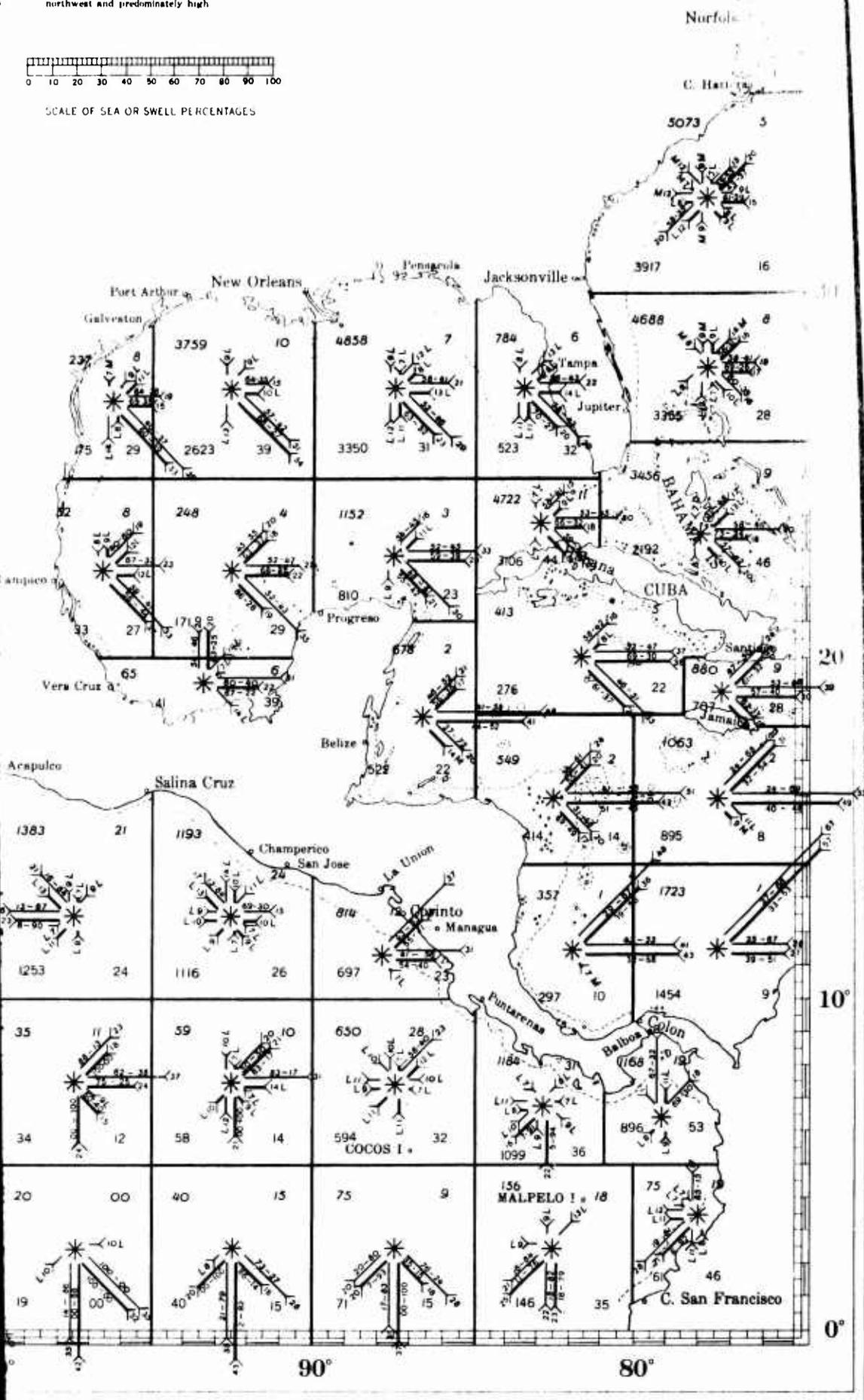
5

Calculations (light line arrow) were based on 128 observations of which 8 percent were calm, 14 percent were from the southwest and predominately medium, 31 percent were from the west, of which 66 percent were low and 34 percent were medium, 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium, 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calm, 7 percent were from the east and predominately medium, 13 percent were from the southeast and predominately low, 26 percent were from the south, of which 33 percent were low and 67 percent were medium, 17 percent were from the southwest, of which 60 percent were low and 40 percent were medium, 14 percent were from the west and predominately medium, 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



160°

150°

140°

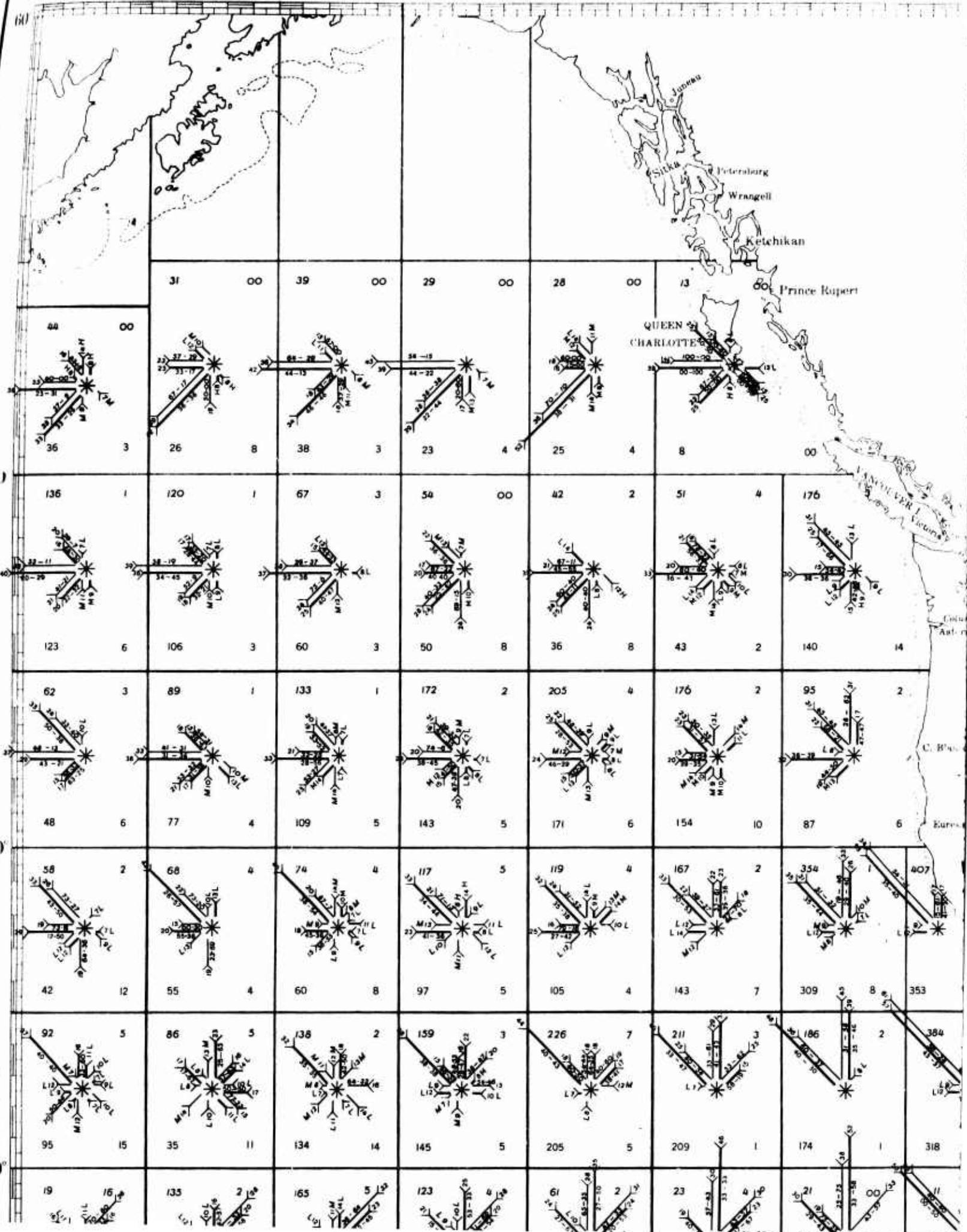
130°

60

50

40

30



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

MAY

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

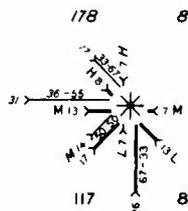
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentages of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 6, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

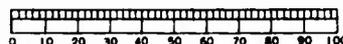
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:

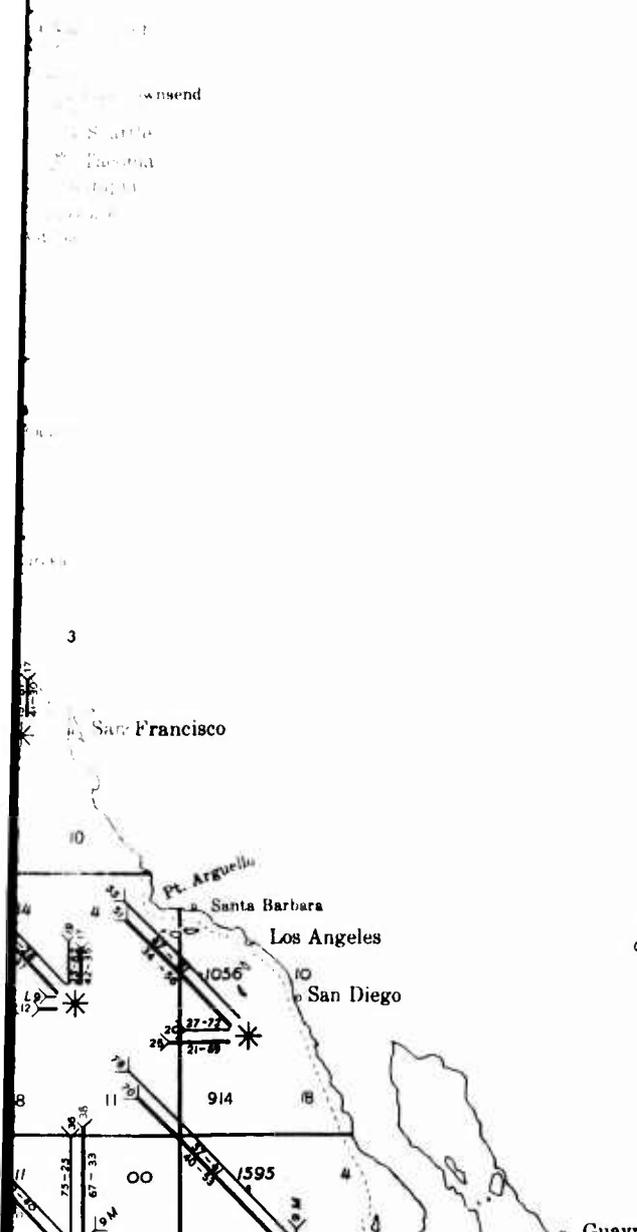


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 8 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 97 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES





THE EASTERN PACIFIC OCEAN SEA AND SWELL CHART

MAY

PREVAILING SEAS, SWELLS AND CALMS

Information shown on this chart has been compiled from observations made during the month by the cooperating Hydrographic Office and including the year 1942, the majority of the observations having been taken years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and as where the number of observations is small the graphical presentation will convey a false impression unless thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THIS CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE INFORMATION FOR SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black ink, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEAS AND SWELLS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or more the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner. The arrows point in the directions toward which the seas or swells move. The length of the arrow from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

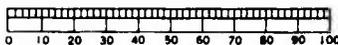
When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow. The first figure from the center is always the percent of low. The percent of medium or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium, or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for swells in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

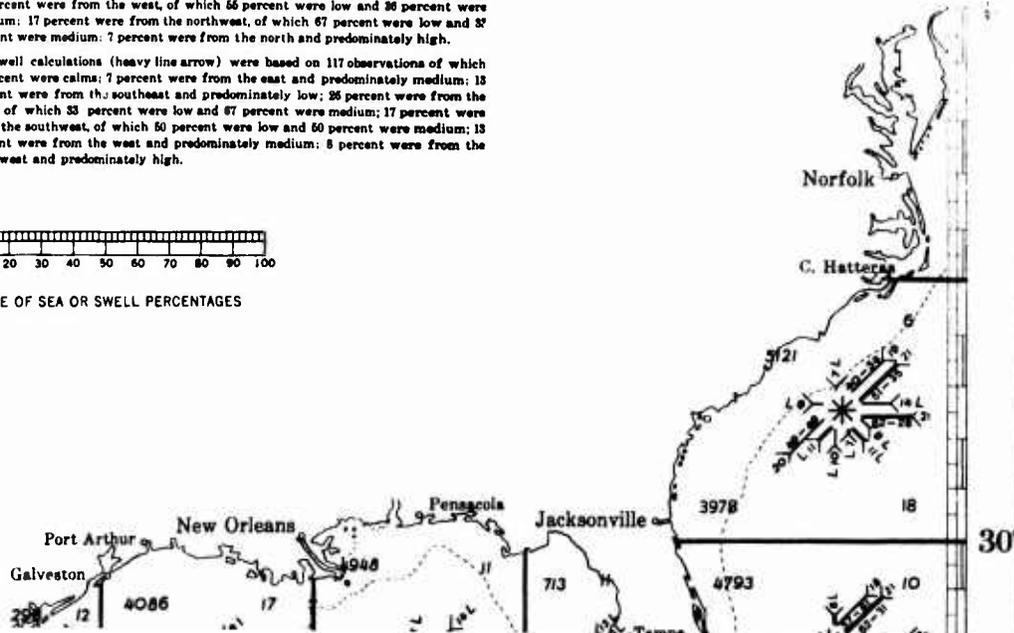
For example—The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 8 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 18 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

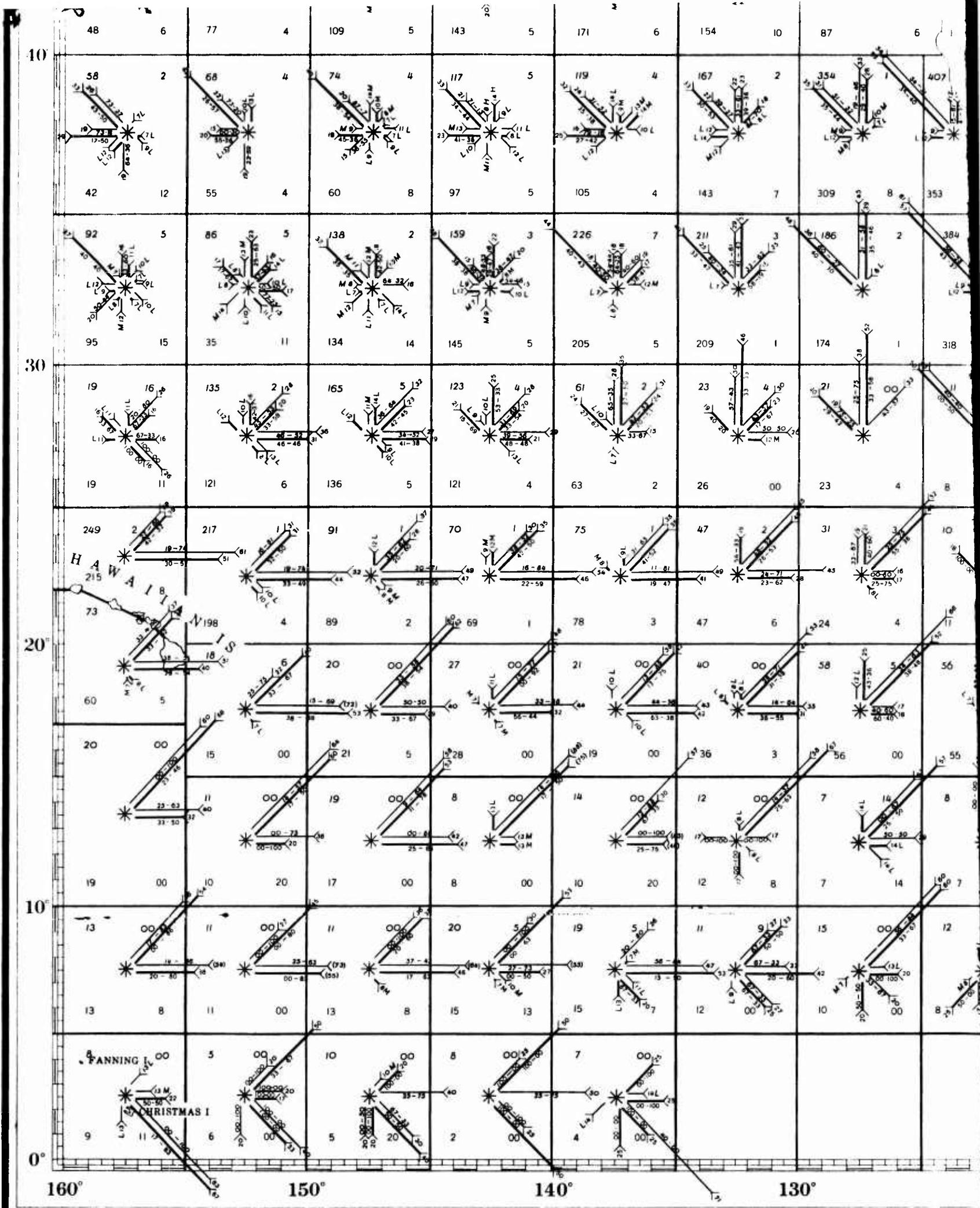


SCALE OF SEA OR SWELL PERCENTAGES

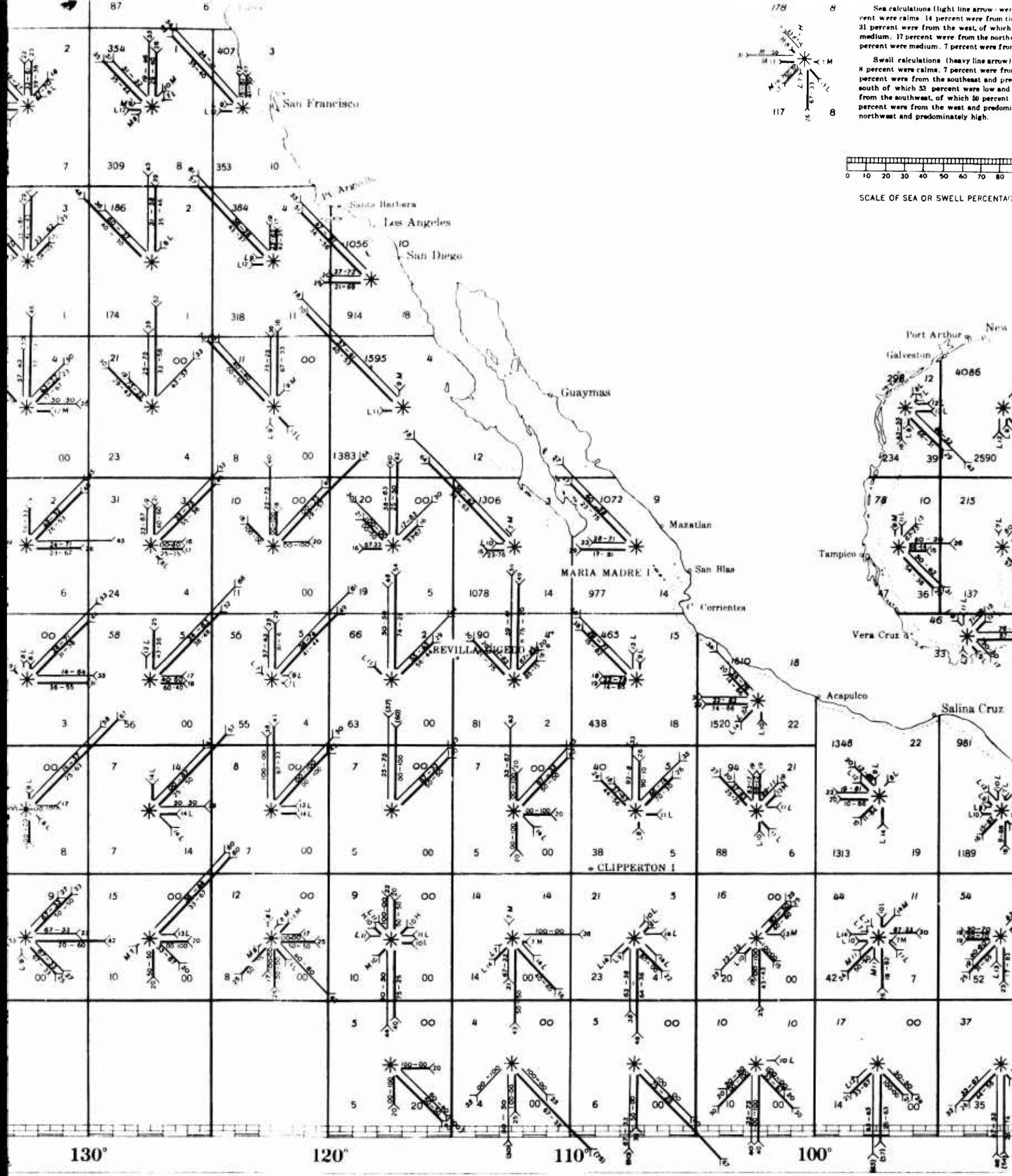


50

3



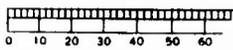
4



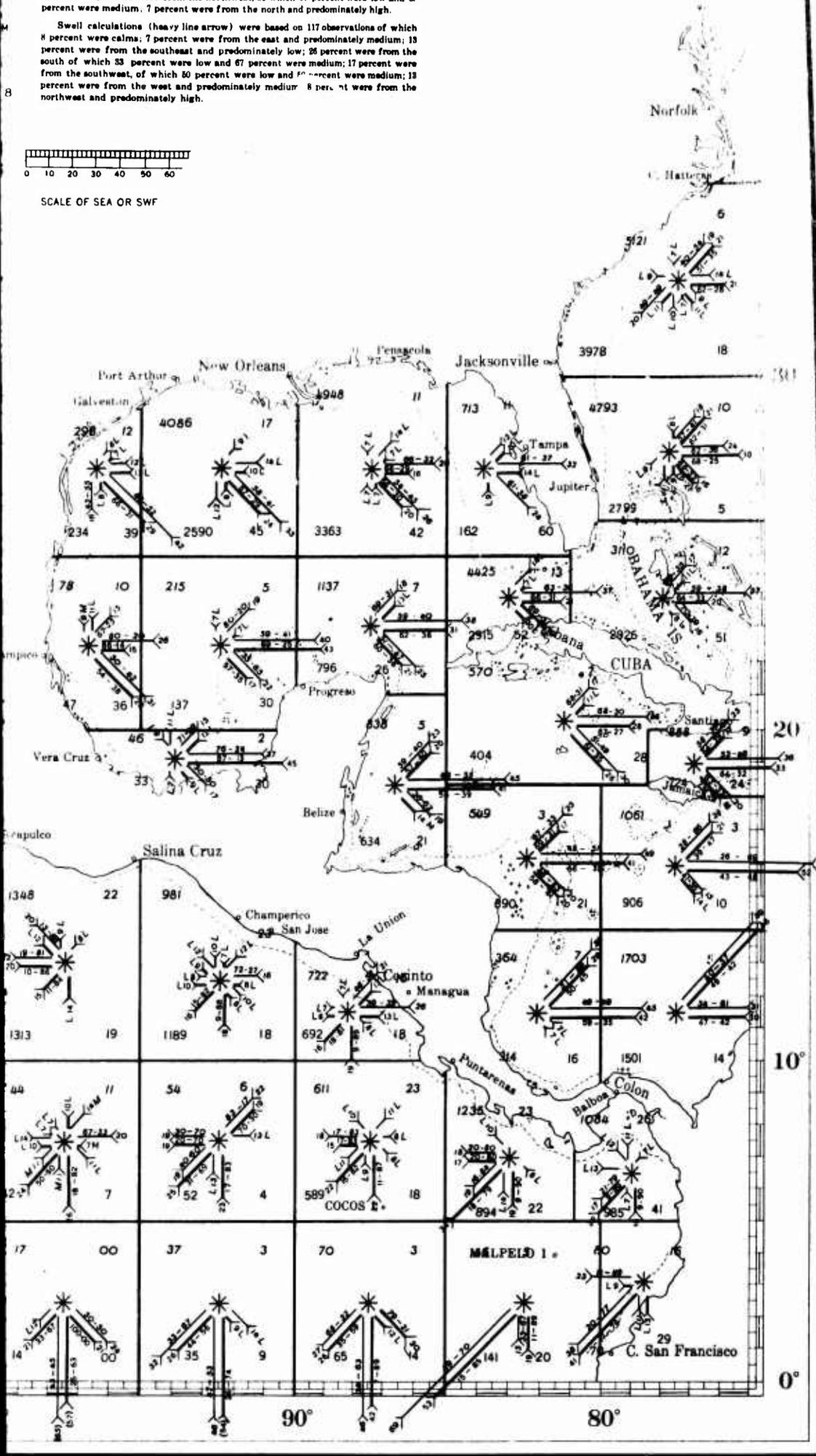
5

ent were calms. 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium. 17 percent were from the northwest, of which 67 percent were low and 27 percent were medium. 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium. 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWF



6

160°

150°

140°

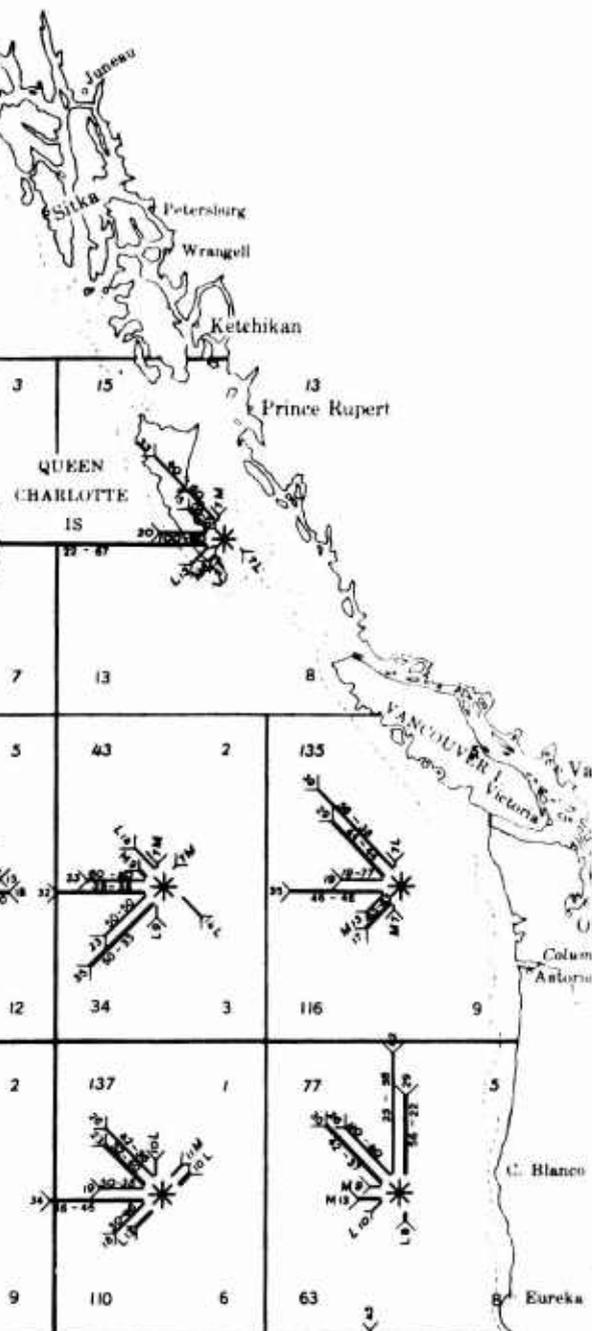
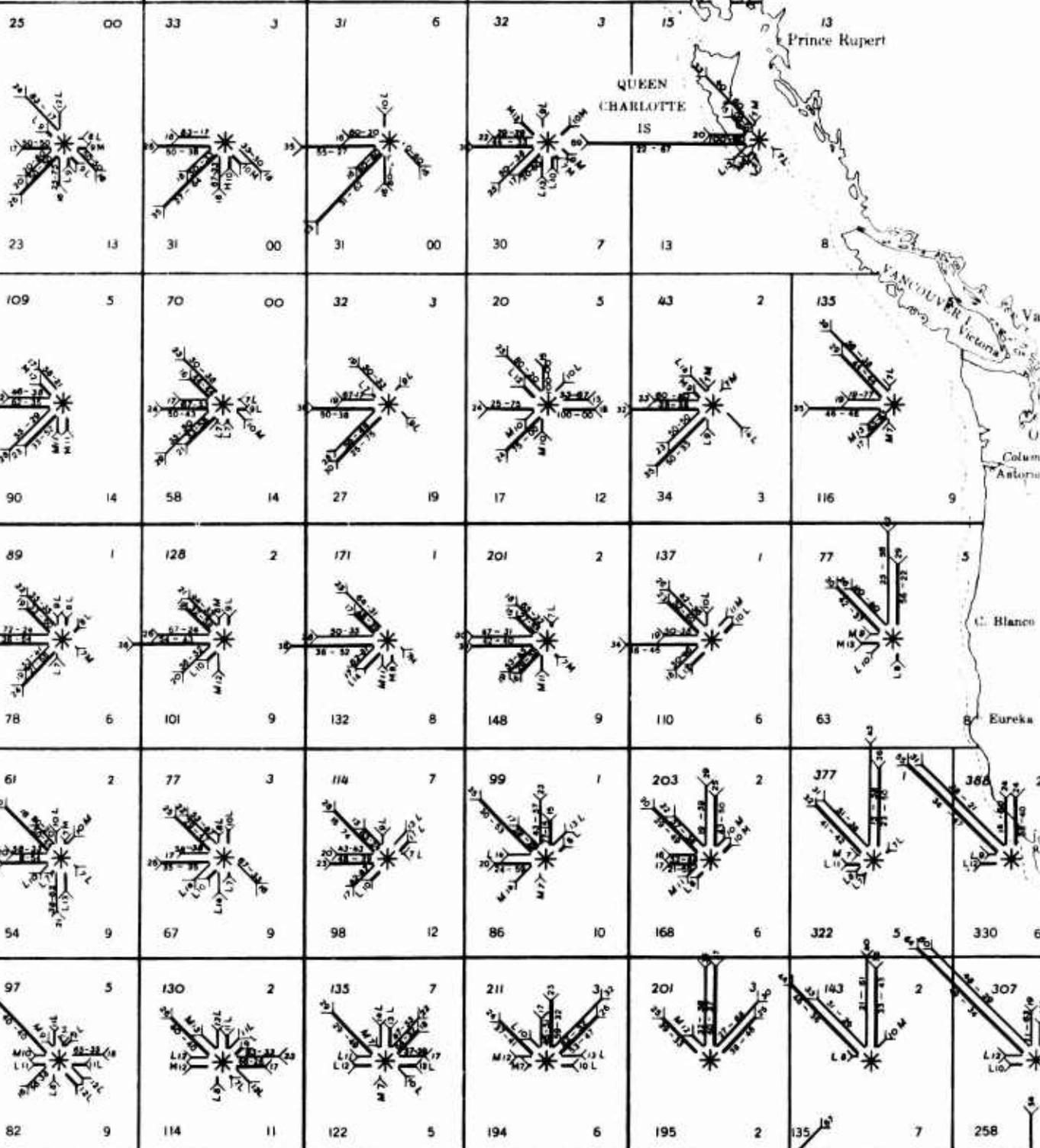
130°

60

50

40

30



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

JUNE

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

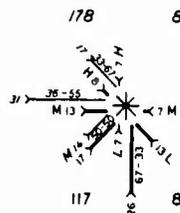
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown line. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 6, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

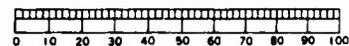
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows

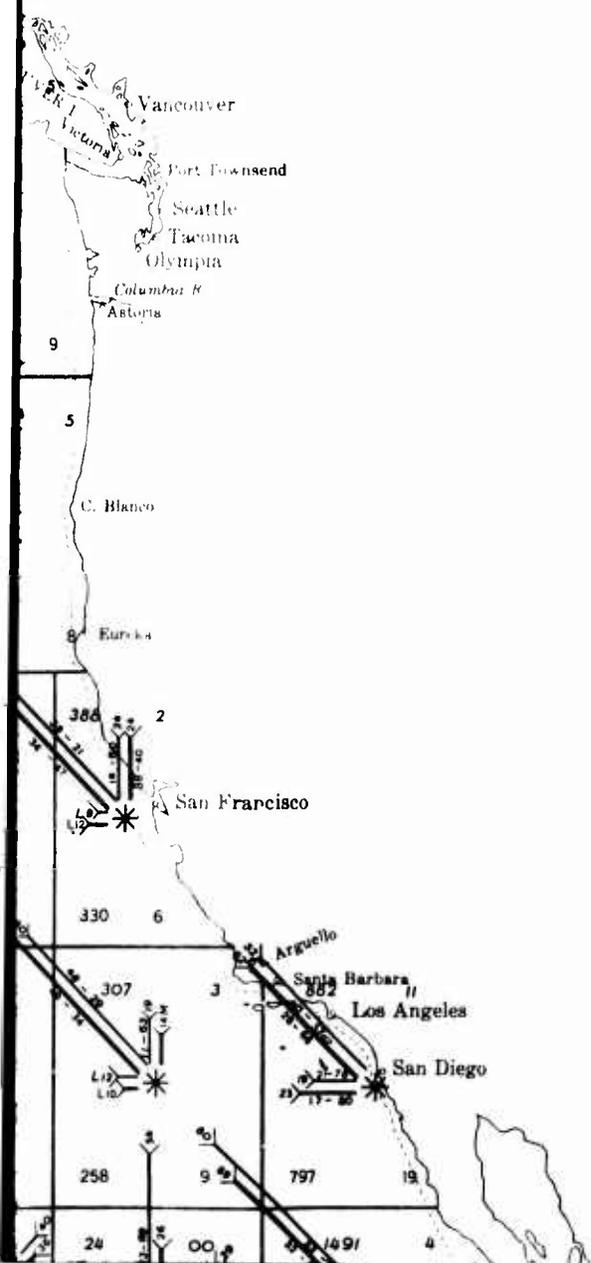


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 66 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



90°

80

60

PACIFIC OCEAN WIND CHART

WINDS AND CALMS

Observations made during the month by the cooperating stations, the majority of the observations having been taken down all information in its files, however slight, and presentation will convey a false impression unless for any given area consider the number of observations adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL CONDITIONS FOR BOTH ARE SHOWN ON THIS CHART. IT SHOULD BE UNDERSTOOD THAT THE PERCENTAGES UNDER THOSE DIRECTIONS WILL NOT BE THE SAME AS THE PERCENTAGES UNDER THOSE DIRECTIONS.

NOTATION

Roses, by means of an eight point double rose, printed in the area outlined on the brown base. THE SEA AND SWELL CONDITIONS ARE SHOWN IN SLANTING TYPE, WHILE THE WIND CONDITIONS ARE SHOWN IN VERTICAL TYPE. No arrow is shown if the number of observations in any direction is less than 15. In that direction may be shown in the usual manner the sea or swells move. The length of the arrow and the numeral at the tail of the arrow, gives the direction and the amount of the swell moving from or near the given point. In instances where the swell is from the sea, the true percent at the

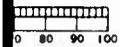
direction are shown along the shaft of the arrow and the numeral at the center is always the percent of low. The percent of high is shown in the lower right hand corner of the rose. When the percent of direction is less than 10, the letter L, M, or H (meaning predominately low, medium, or high) is shown in the lower left hand corner of the rose. The amount of sea and swells (low, medium and high) is shown in the lower right hand corner of the rose. The amount of sea and swells, those of

the lower right hand corner of the area and the percent of calms for the month is shown in the lower left hand corner of the area.

The rose should be read as follows:

Example: The rose above were based on 178 observations of which 8 percent were from the southwest and predominately medium; 56 percent were low and 36 percent were from the northwest, of which 67 percent were low and 33 percent were from the north and predominately high.

Example: The rose above were based on 117 observations of which 13 percent were from the east and predominately medium; 13 percent were from the east and predominately low; 26 percent were from the east and predominately high; 17 percent were from the west and predominately low; 17 percent were from the west and predominately medium; 13 percent were from the west and predominately high; 8 percent were from the west and predominately low.



PERCENTAGES

New Orleans

Pensacola

Jacksonville

Norfolk

C. Hatteras

4981

3892

4464

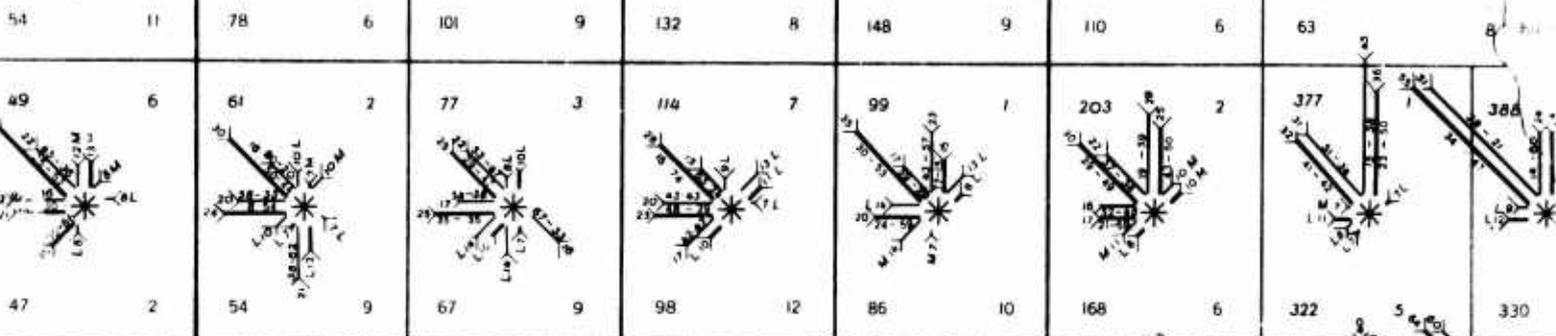
16

30°

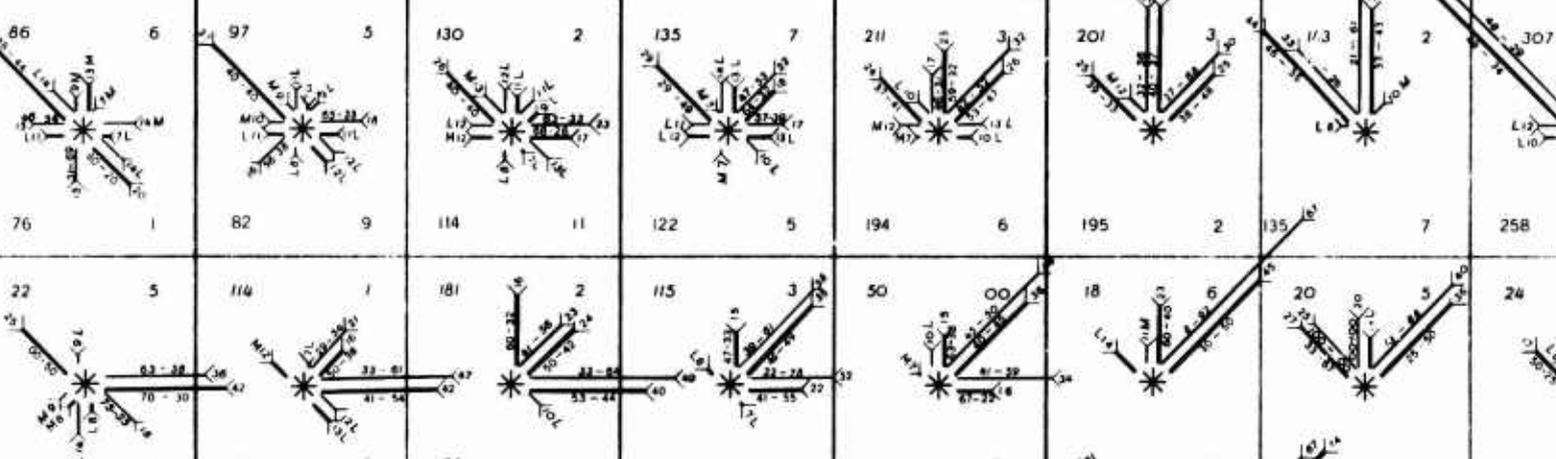
4

50

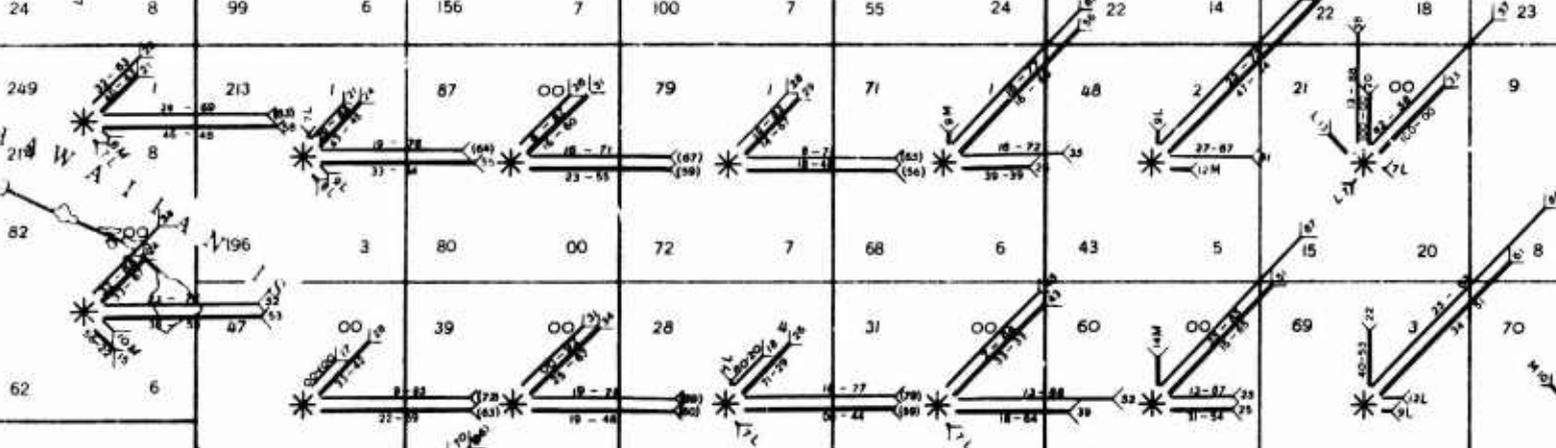
10



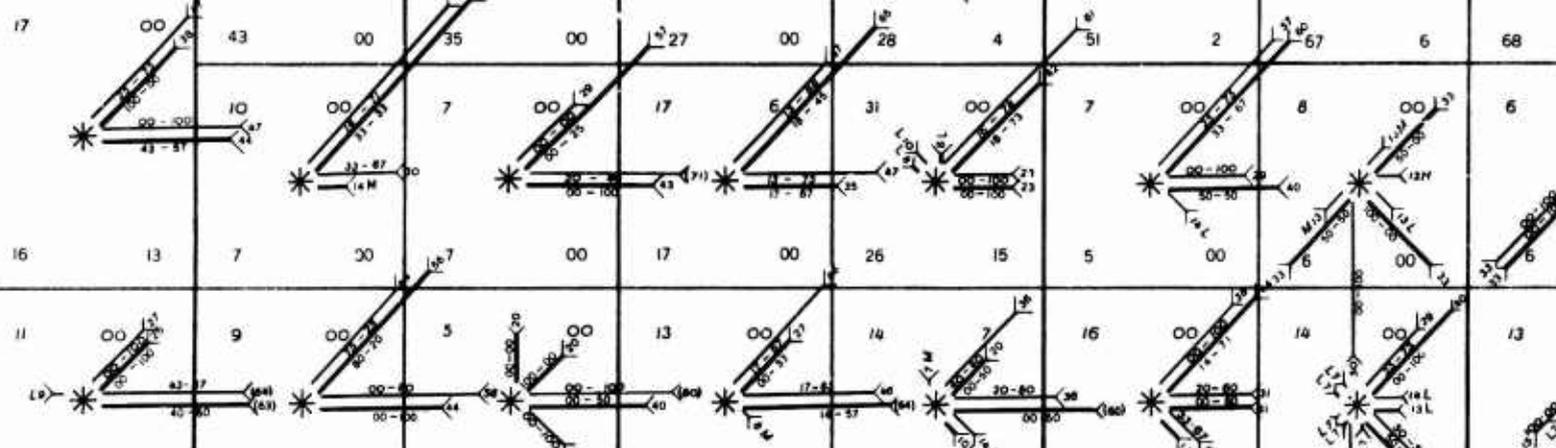
30



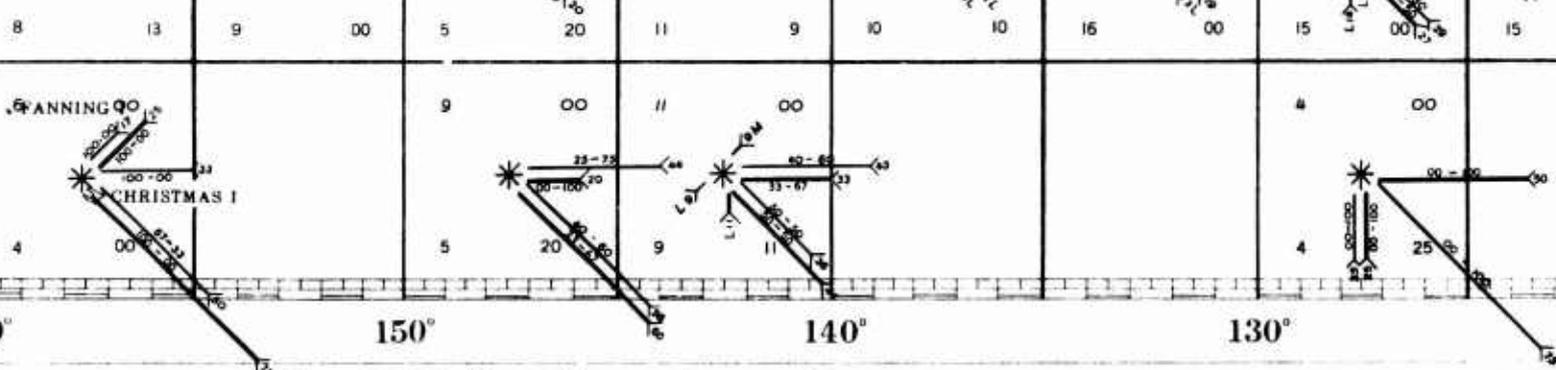
20



10



0°



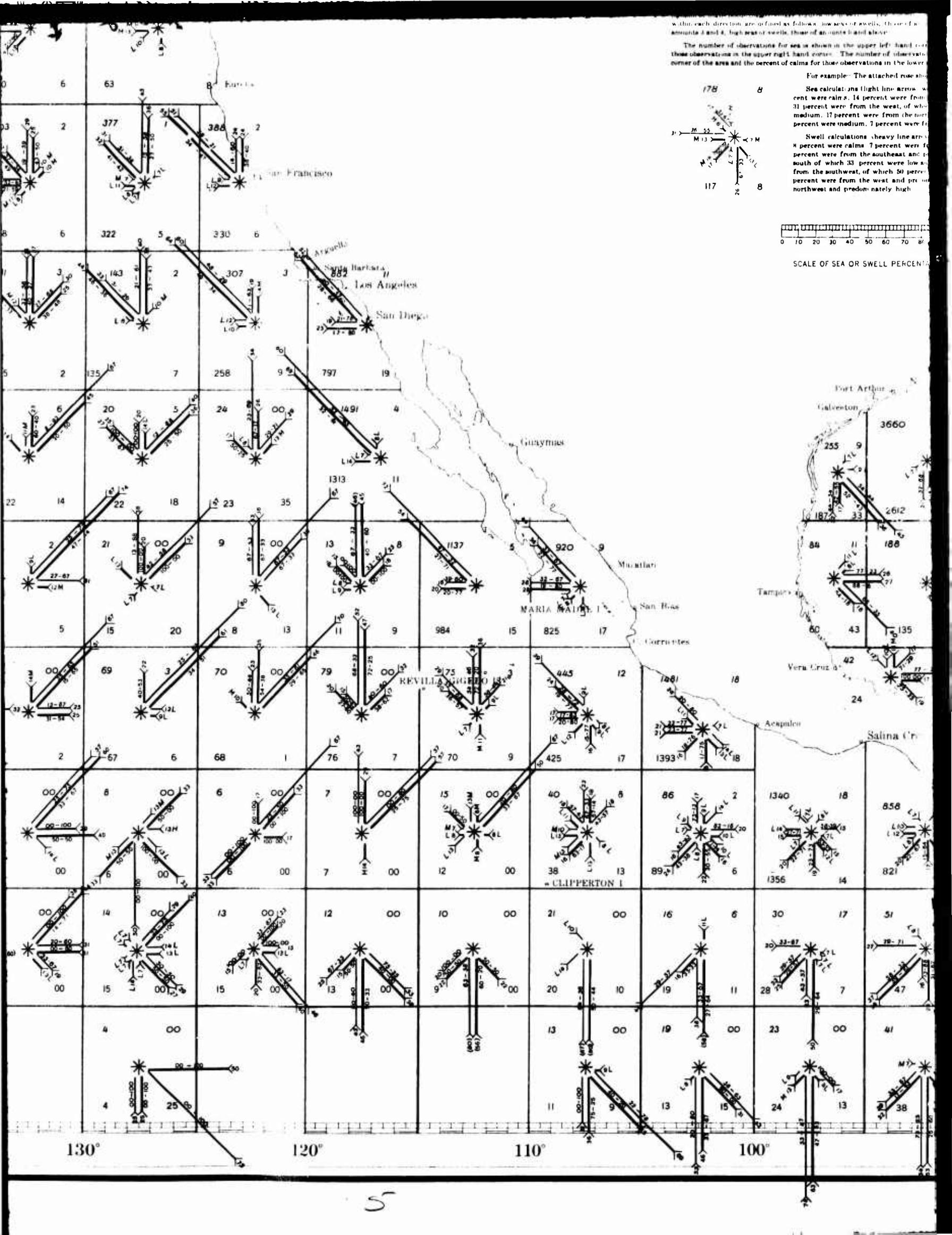
160°

150°

140°

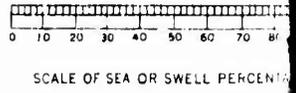
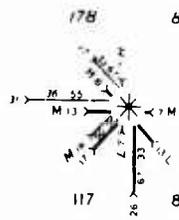
130°

SPANNING
CHRISTMAS I



with each direction are as follows: low seas or swells, three of a minute 1 and 4, high seas or swells, three of a minute 1 and 4.

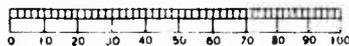
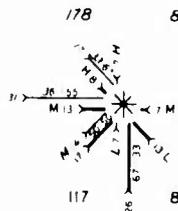
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the lower



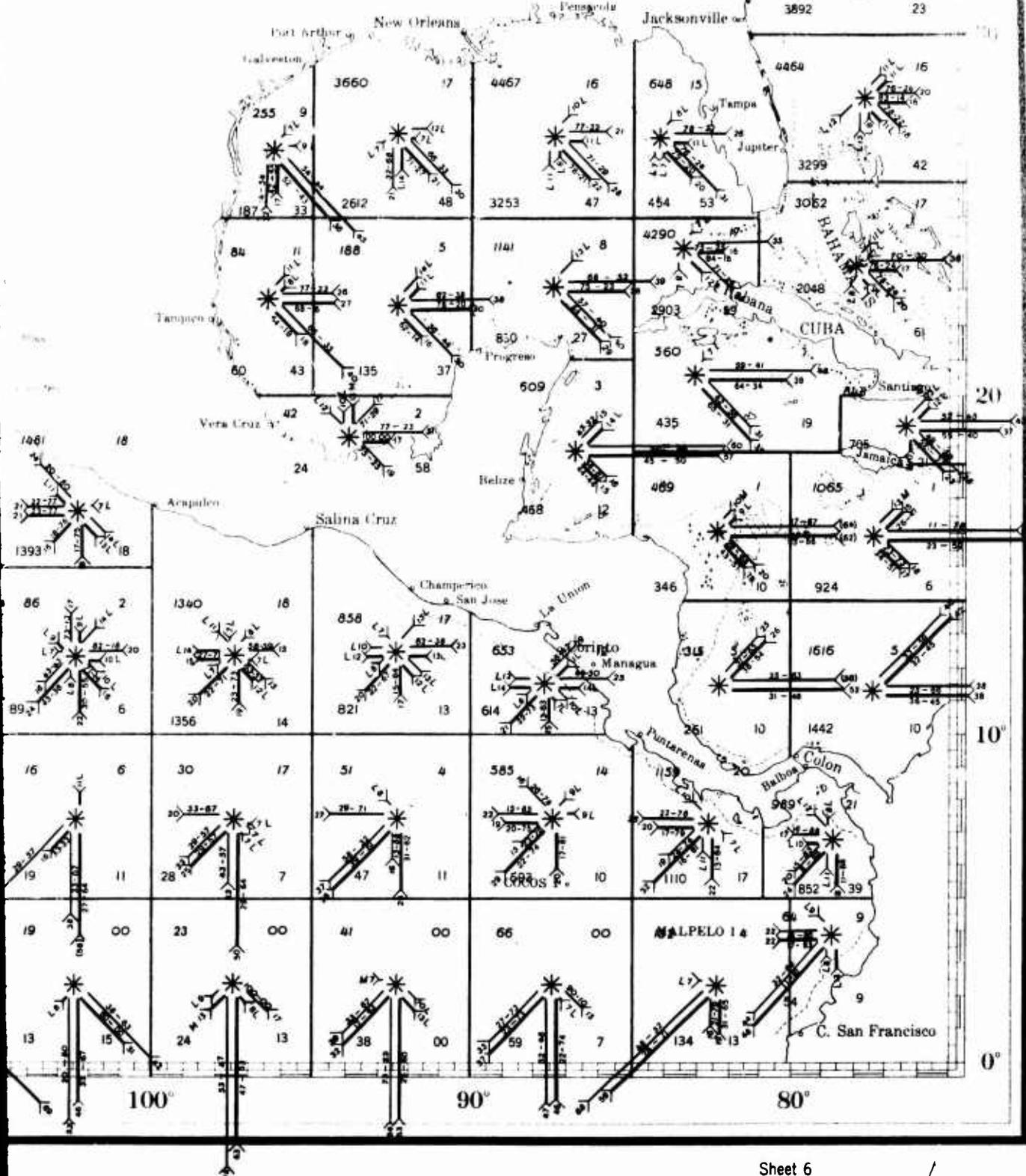
For example: The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms. 14 percent were from the southwest and predominately medium. 31 percent were from the west, of which 56 percent were low and 36 percent were medium. 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium. 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms. 7 percent were from the east and predominately medium. 13 percent were from the southeast and predominately low. 26 percent were from the south of which 33 percent were low and 67 percent were medium. 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium. 13 percent were from the west and predominately medium. 4 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

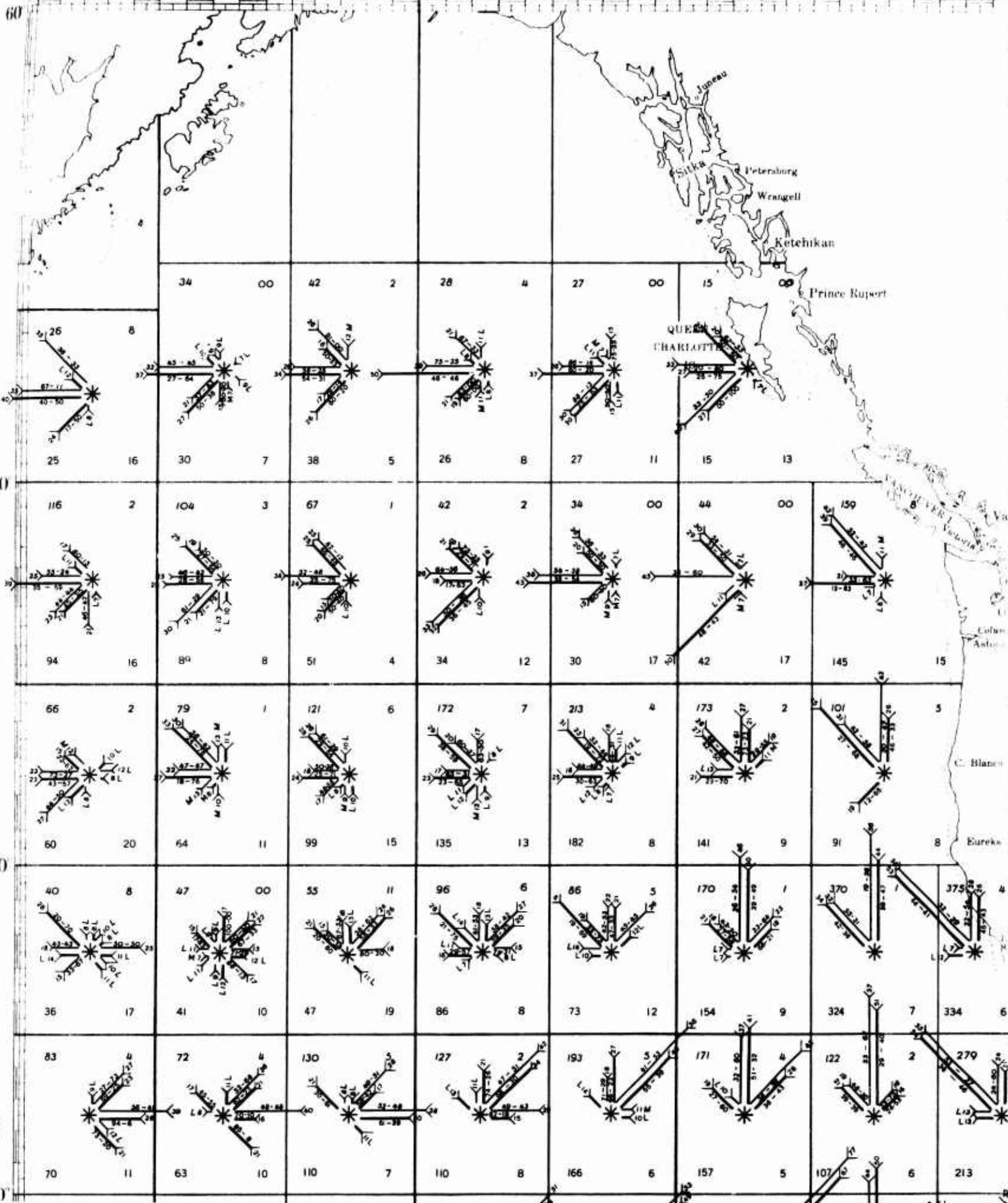


160°

150°

140°

130°



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

JULY

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1903 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

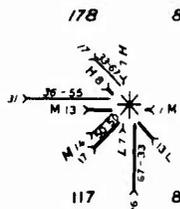
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 4, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

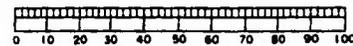
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:

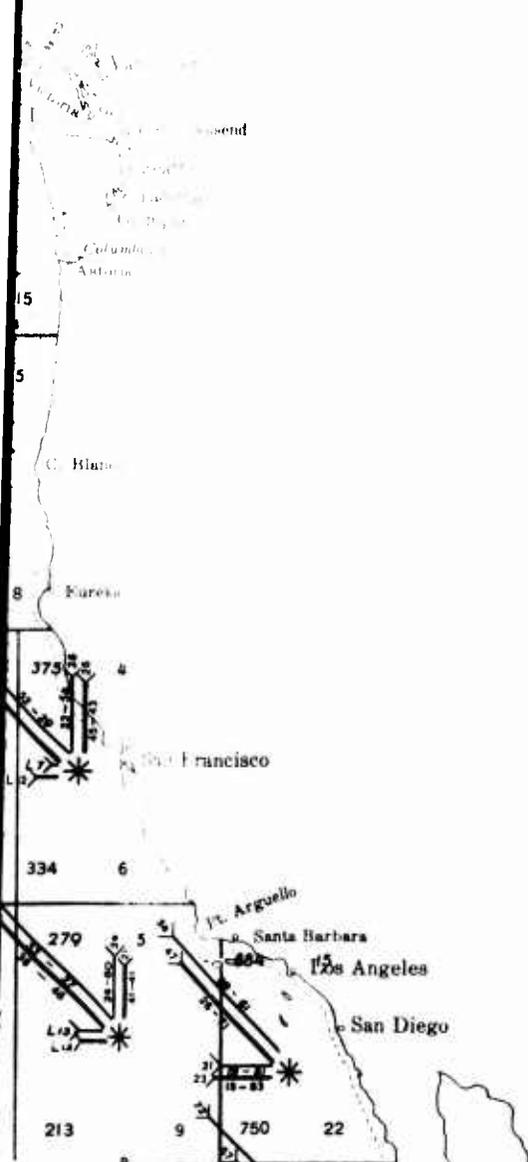


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

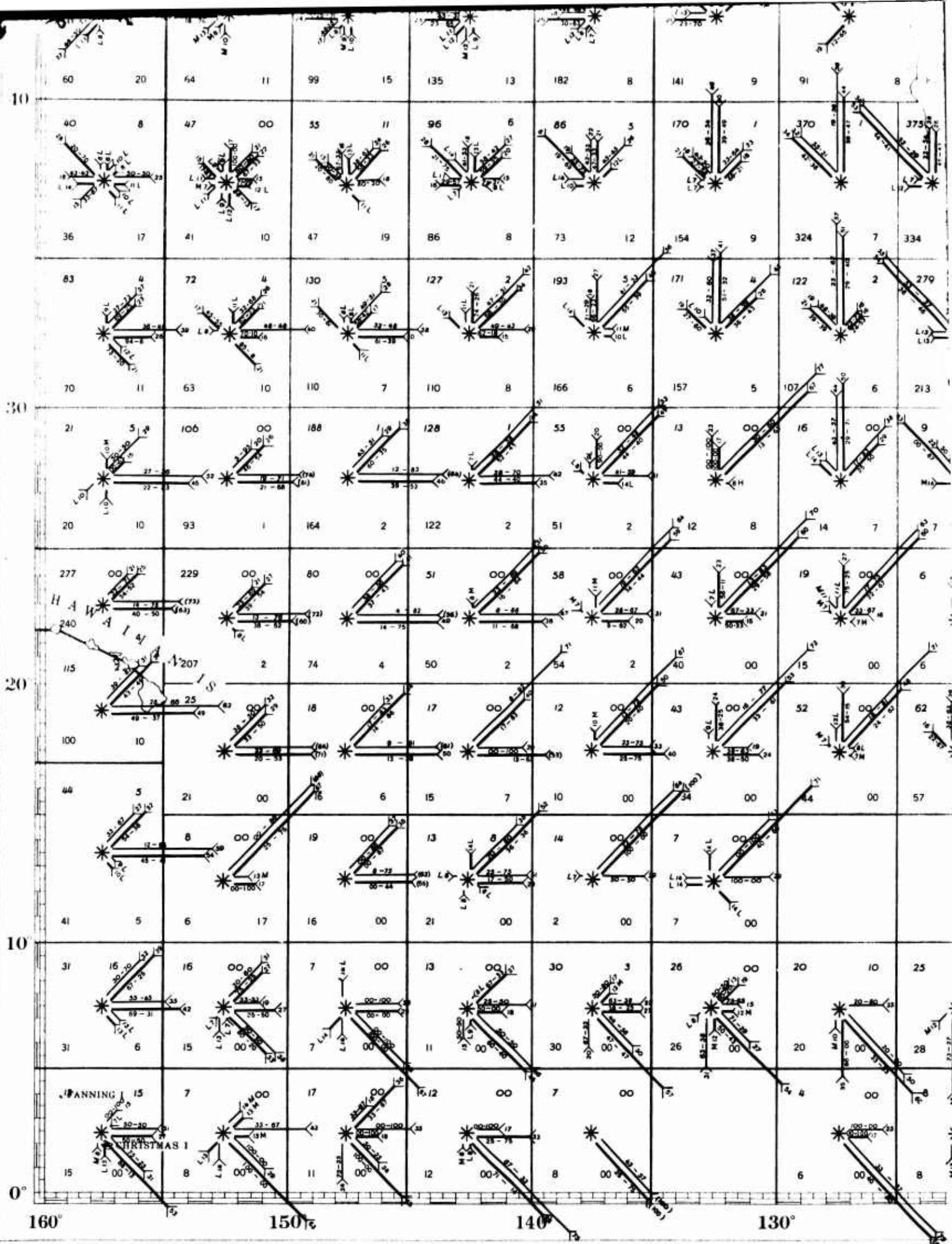


SCALE OF SEA OR SWELL PERCENTAGES



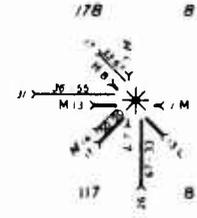
2





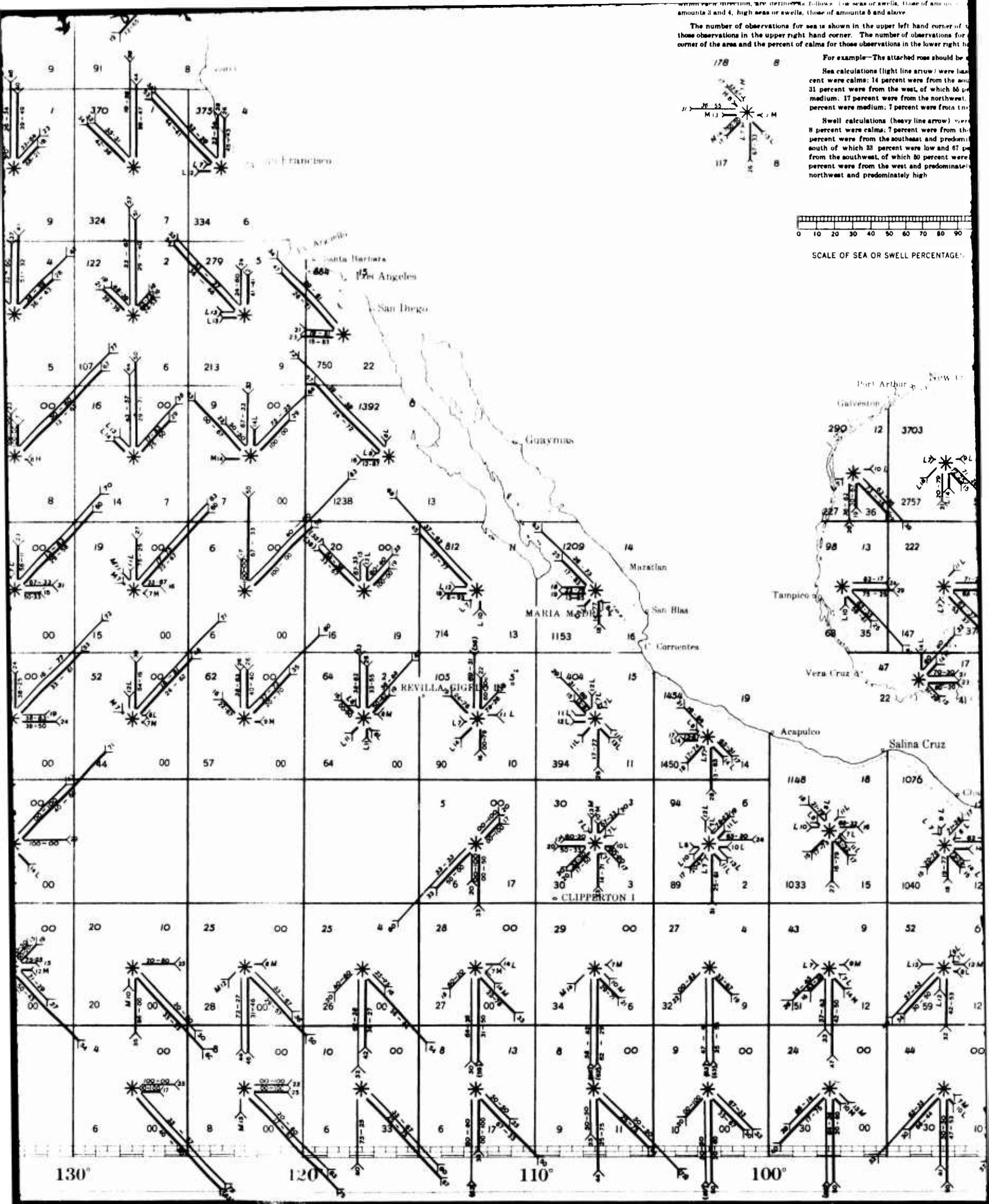
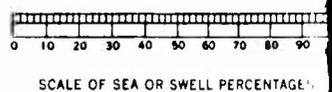
4

The number of observations for sea is shown in the upper left hand corner of each square. The number of observations for swell is shown in the upper right hand corner. The number of observations for high seas or swells, those of amount 3 and 4, high seas or swells, those of amount 5 and above.



For example—The attached rose should be read as follows:—Sea calculations (light line arrow) were 8 percent were calm; 14 percent were from the west, of which 31 percent were from the west, of which 86 percent were from the west, of which 17 percent were from the northwest, of which 7 percent were from the north.

Swell calculations (heavy line arrow) were 8 percent were calm; 7 percent were from the southeast and predominant south of which 33 percent were low and 67 percent were from the west, of which 80 percent were from the west and predominately north and predominately high.

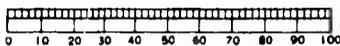


The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

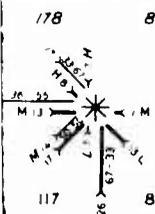
For example—The attached rose should be read as follows

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 16 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 35 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

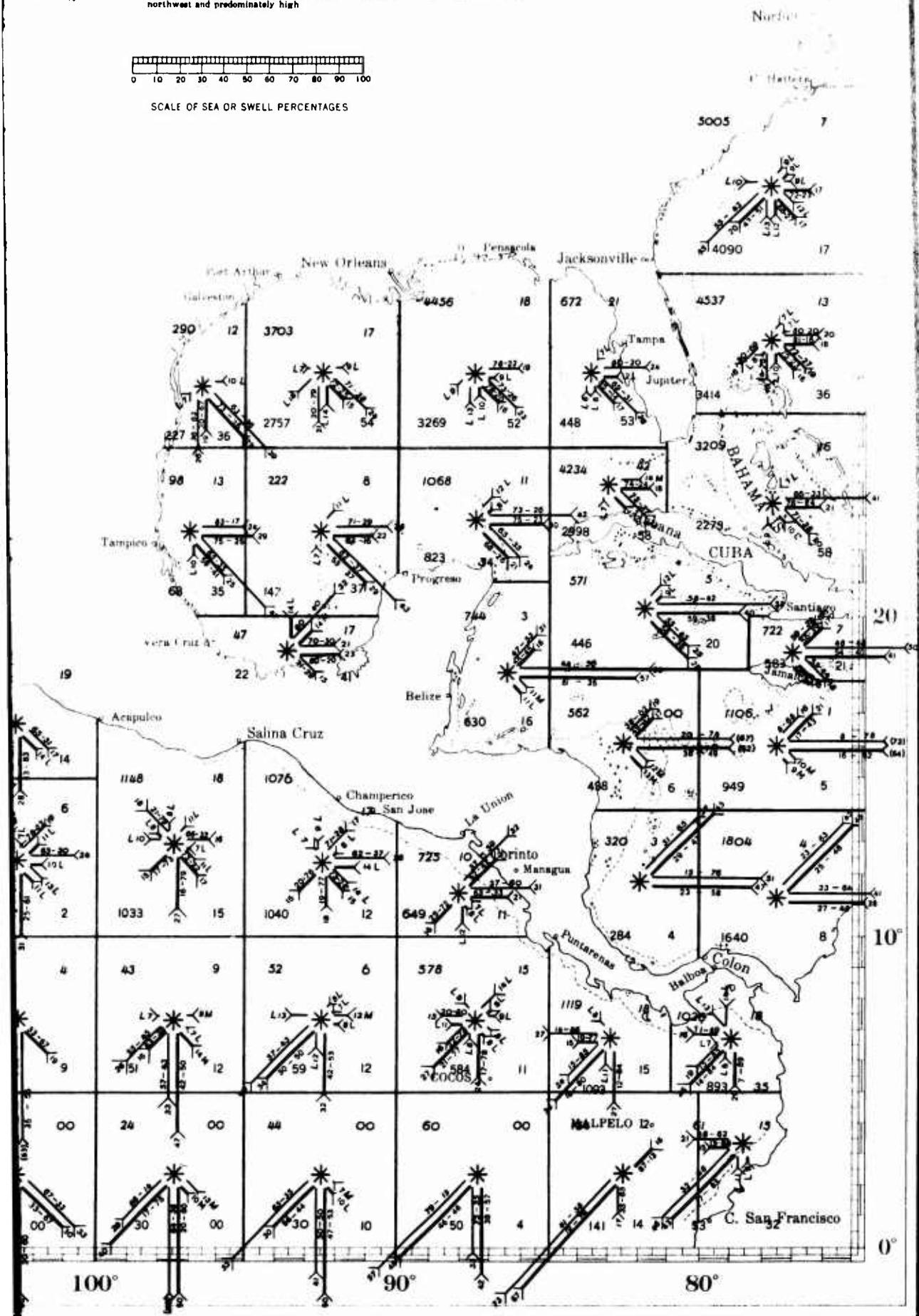


SCALE OF SEA OR SWELL PERCENTAGES



178 8

117 8



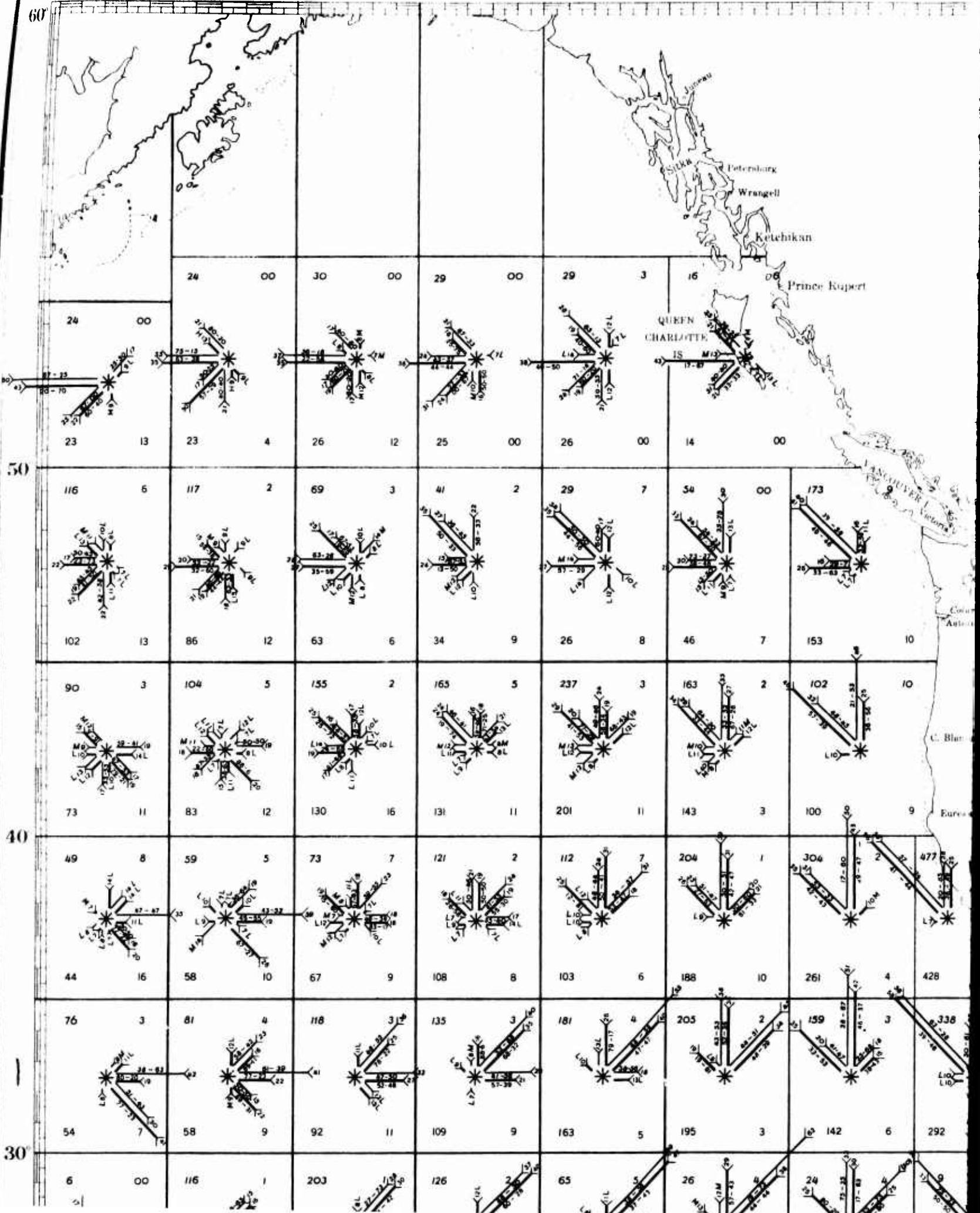
160°

150°

140°

130°

60°



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

AUGUST

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

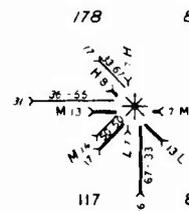
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parentheses.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 8, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2, medium seas or swells, those of amounts 3 and 4, high seas or swells, those of amounts 5 and above.

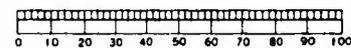
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows

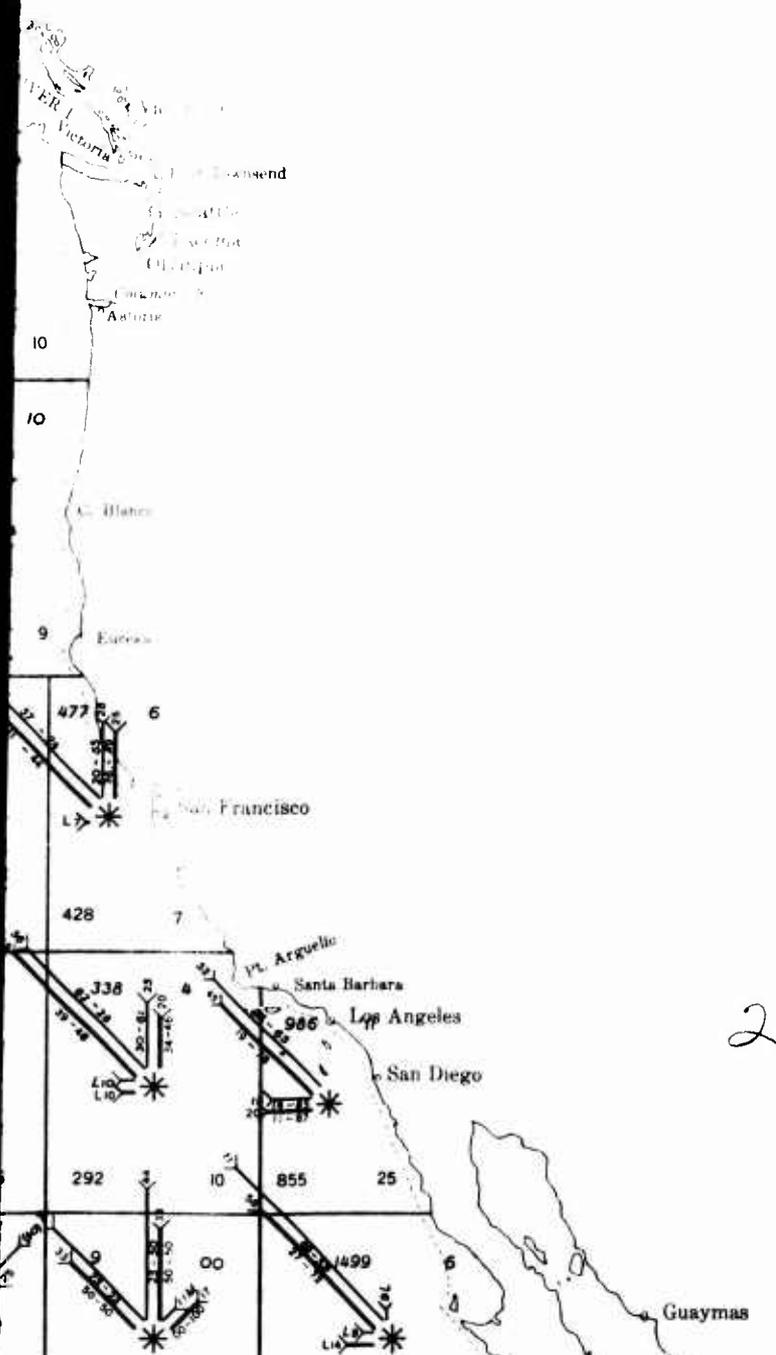


Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES





EASTERN PACIFIC OCEAN SEA AND SWELL CHART

AUGUST

PREVAILING SEAS, SWELLS AND CALMS

The information on this chart has been compiled from observations made during the month by the cooperating Hydrographic Office and including the year 1942, the majority of the observations having been taken from 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and where the number of observations is small the graphical presentation will convey a false impression unless the user is evaluating the reliability of the information for any given area consider the number of observations, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL ARE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THIS CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE CONDITIONS FOR SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

METHOD OF PRESENTATION

This chart is to show both graphically and with figures, by means of an eight point double rose, printed on a brown base, the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA AND SWELL ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE DIRECTION OF THE SEAS AND SWELLS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow of direction is less than 7. In instances where the number of observations in any direction is less than 15, the conditions within that direction may be shown in the usual manner. The length of the arrow is proportional to the number of observations. The length of the arrow, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of observations that the seas or swells have been moving from or near the given point. In instances where the arrow cannot be shown, the shaft is shortened as much as necessary and the true percentage is shown in parenthesis.

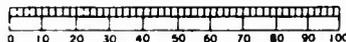
When the number of observations in any direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow. In instances where the number of observations in any direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow. In instances where the number of observations in any direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow.

Observations for sea is shown in the upper left hand corner of the area and the percent of calms for the area is shown in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner and the percent of calms for those observations in the lower right hand corner.

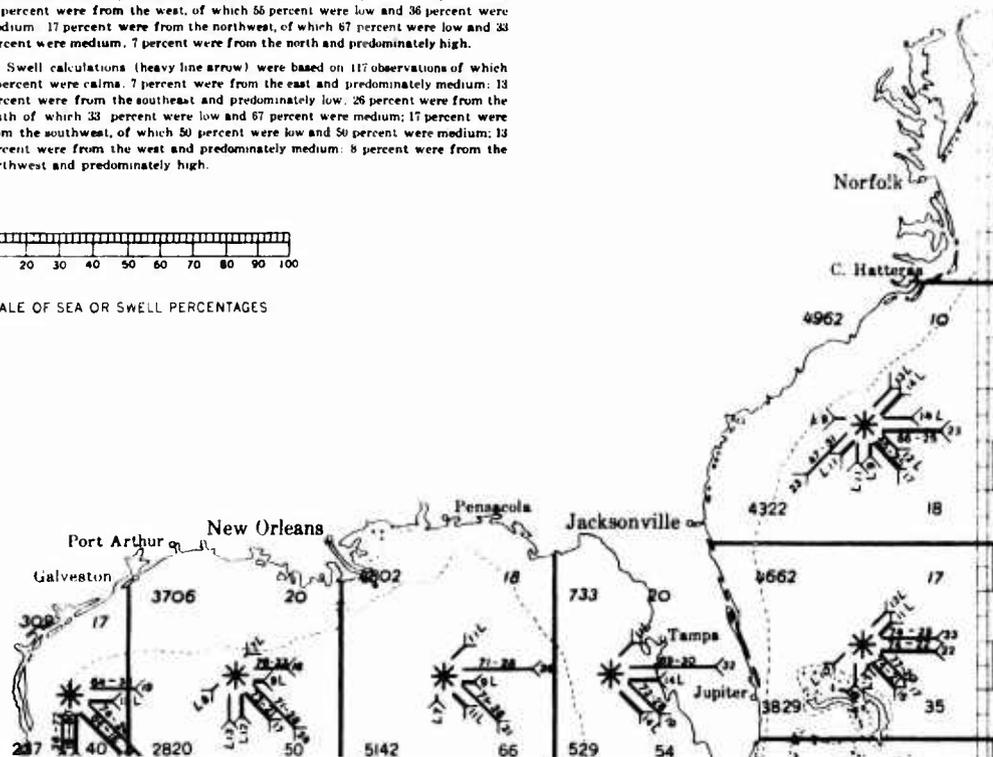
For example: The attached rose should be read as follows

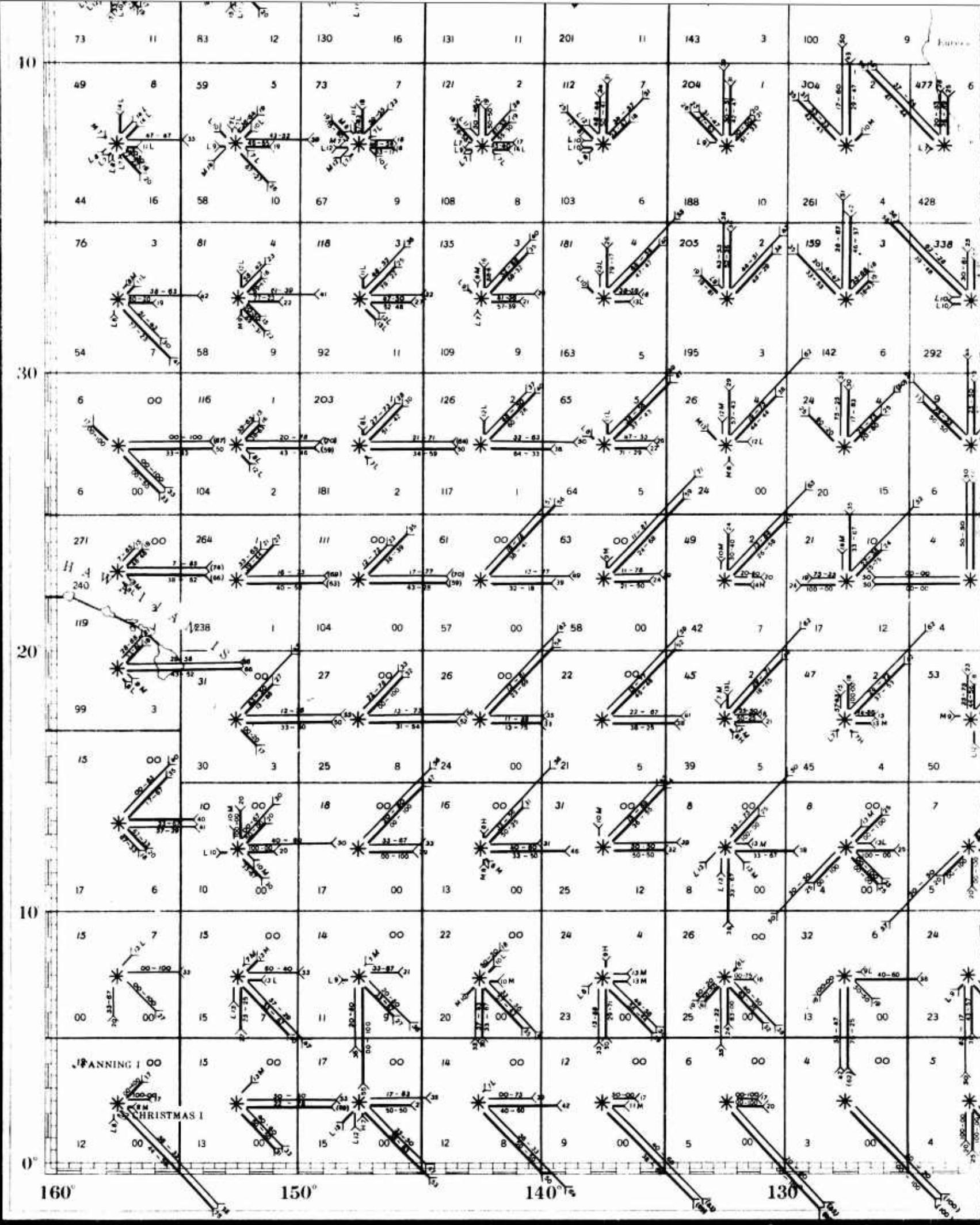
Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south, of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

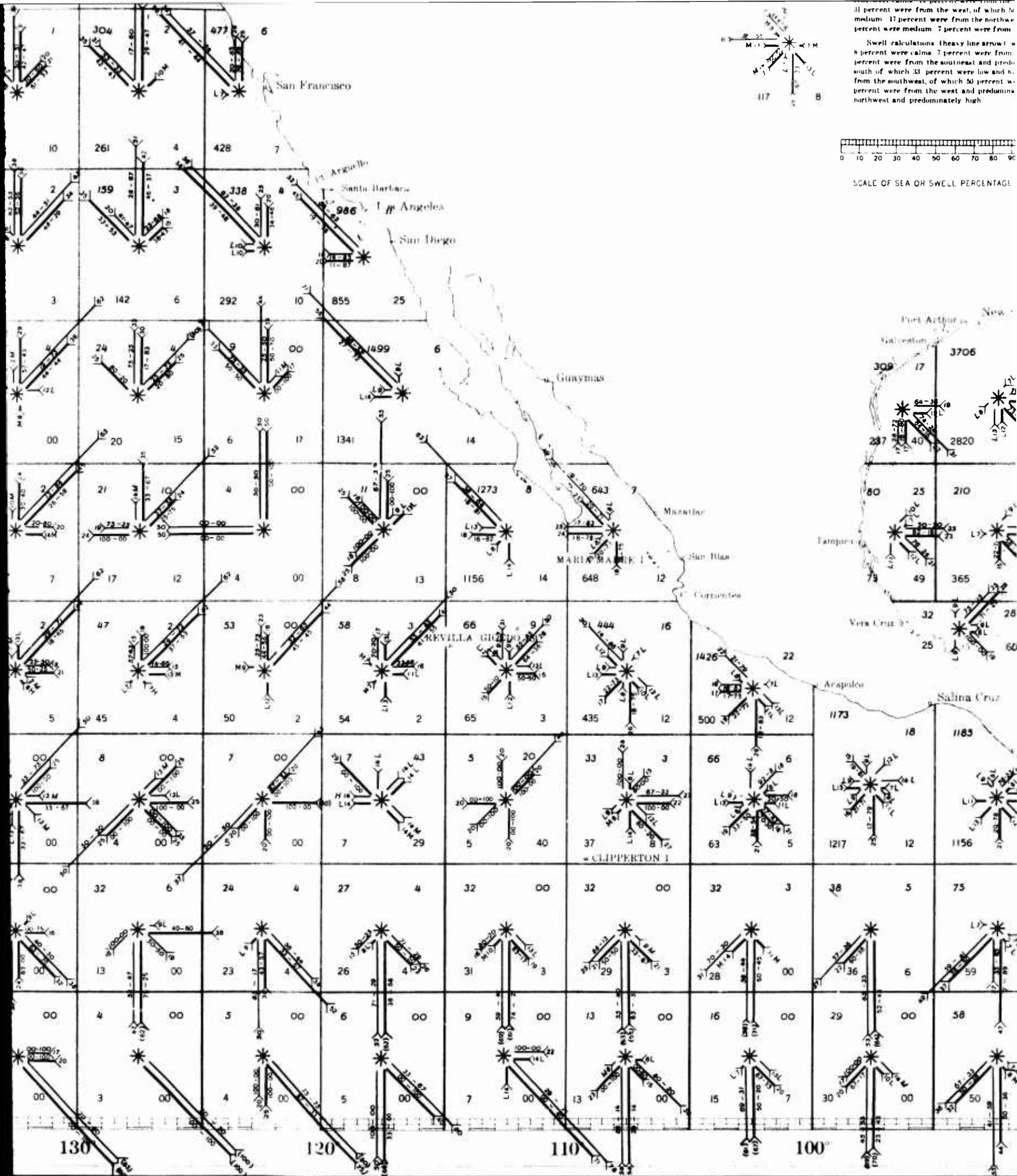


SCALE OF SEA OR SWELL PERCENTAGES





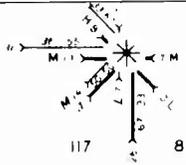
Li



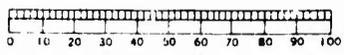
31 percent were from the west, of which 54 percent were medium, 17 percent were from the northwest, 7 percent were from the north, and 7 percent were from the north.

Swell calculations (heavy line arrow) 8 percent were calms, 7 percent were from the southeast and predominantly from the southwest, of which 31 percent were low and 69 percent were from the west and predominantly high.

5



117 8

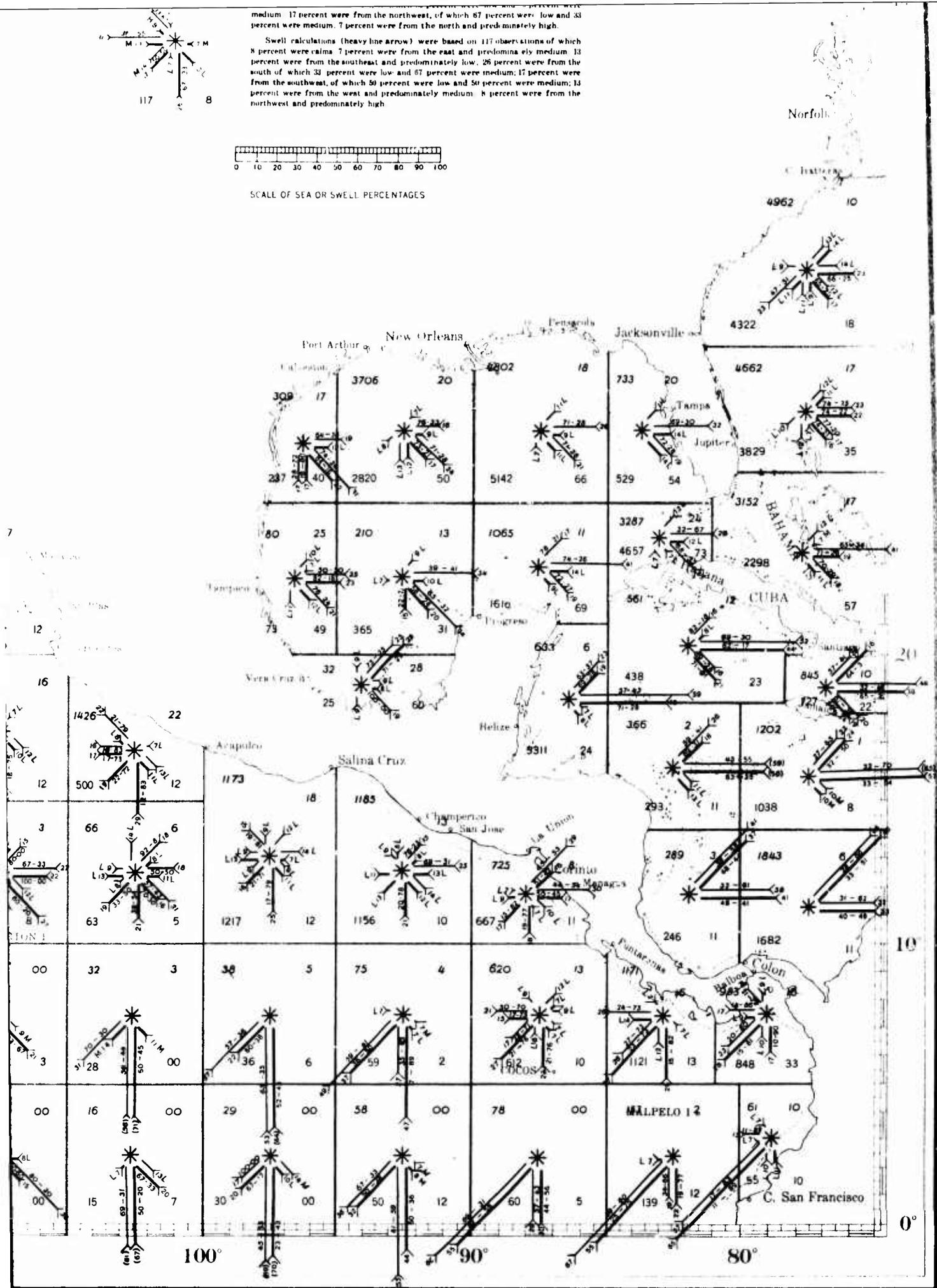


SCALE OF SEA OR SWELL PERCENTAGES

medium 17 percent were from the northwest, of which 87 percent were low and 31 percent were medium. 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium, 13 percent were from the southeast and predominately low, 28 percent were from the south of which 31 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

Norfolk



160°

150°

140°

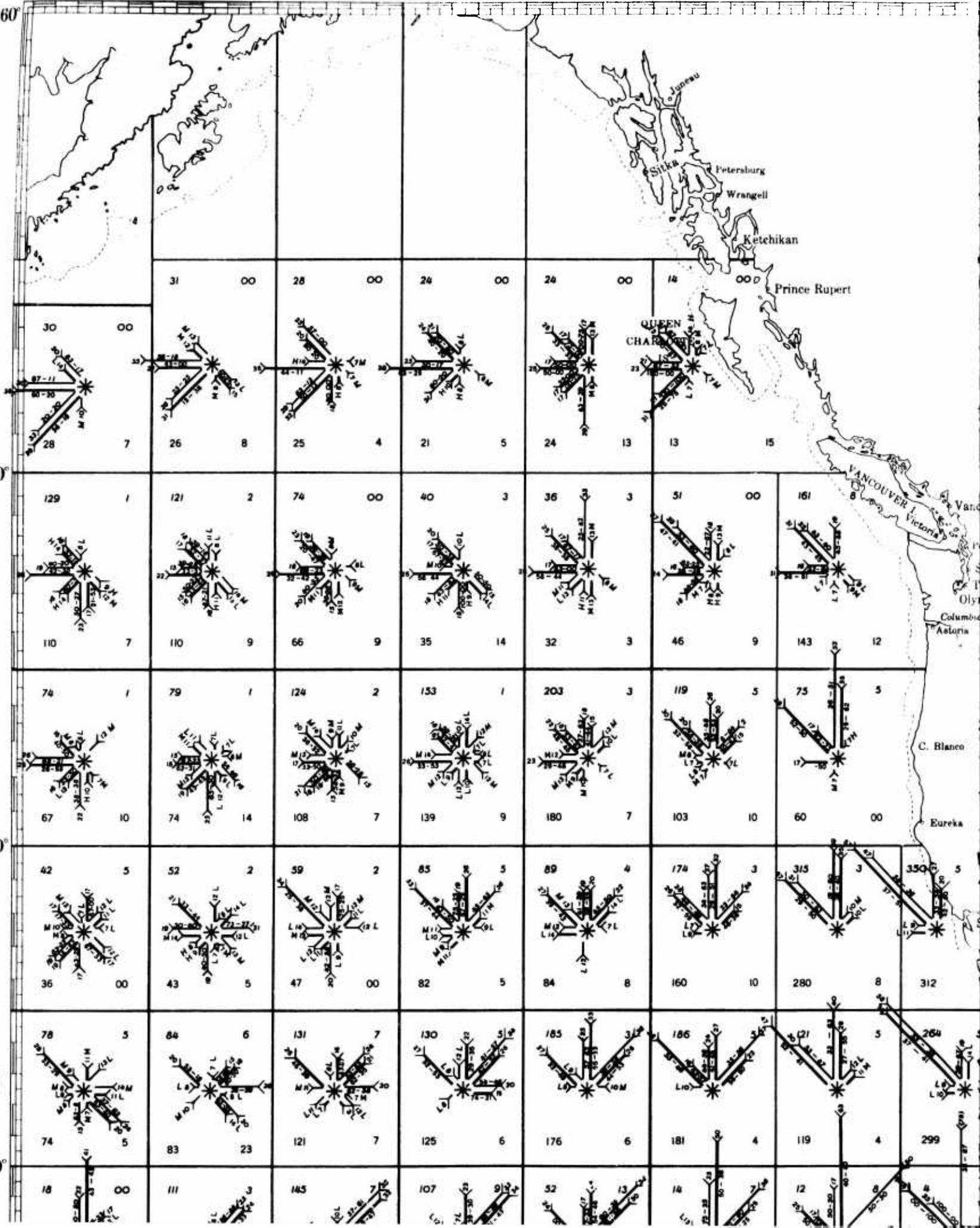
130°

60°

50°

40°

30°



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN

SEA AND SWELL CHART

SEPTEMBER

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. **THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.**

METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. **THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE.** No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

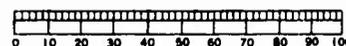
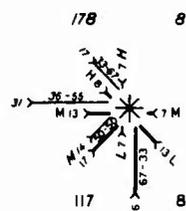
When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 8, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

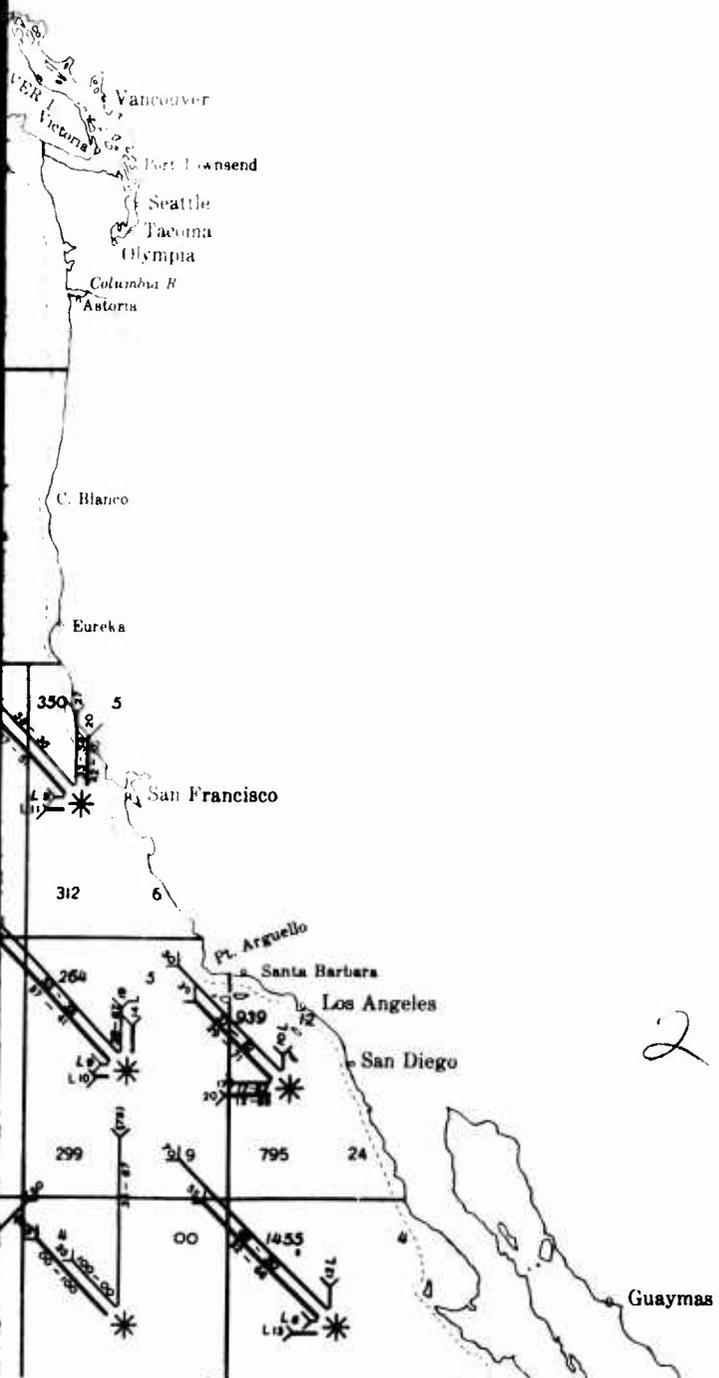
For example—The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 23 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES





SOUTHEASTERN PACIFIC OCEAN

SEA AND SWELL CHART

SEPTEMBER

PREVAILING SEAS, SWELLS AND CALMS

Information shown on this chart has been compiled from observations made during the month by the cooperating offices of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken in the years 1922 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in areas where the number of observations is small the graphical presentation will convey a false impression unless it is thoroughly evaluated. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THIS CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE CONDITIONS FOR SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NEARLY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEAS AND SWELLS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 16 but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner by the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow is proportional to the number of observations, when placed on the attached scale and the numeral at the tail of the arrow, gives the percent of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the full length of the arrow is placed in parenthesis.

In the percent of direction is 16 or over, the conditions within the direction are shown along the shaft of the arrow. In the case of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of medium or swells within the direction is the remainder of the percentage. When the percent of direction is less than 16, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium, or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) in each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

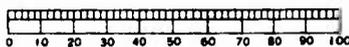
The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for sea is shown in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:

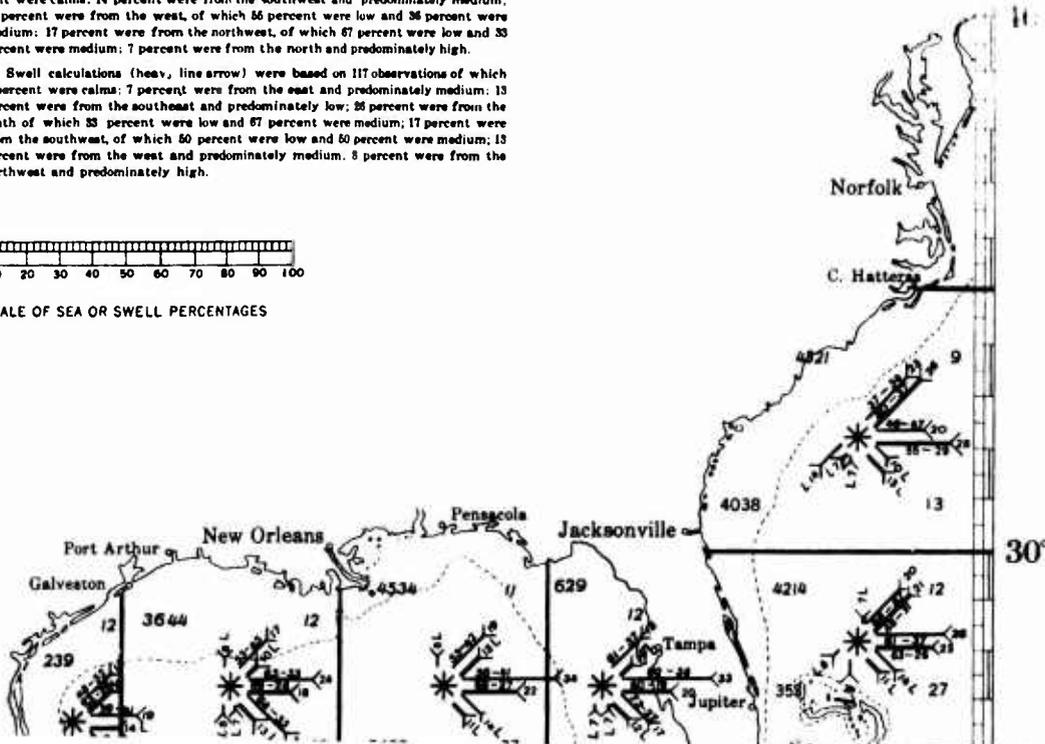


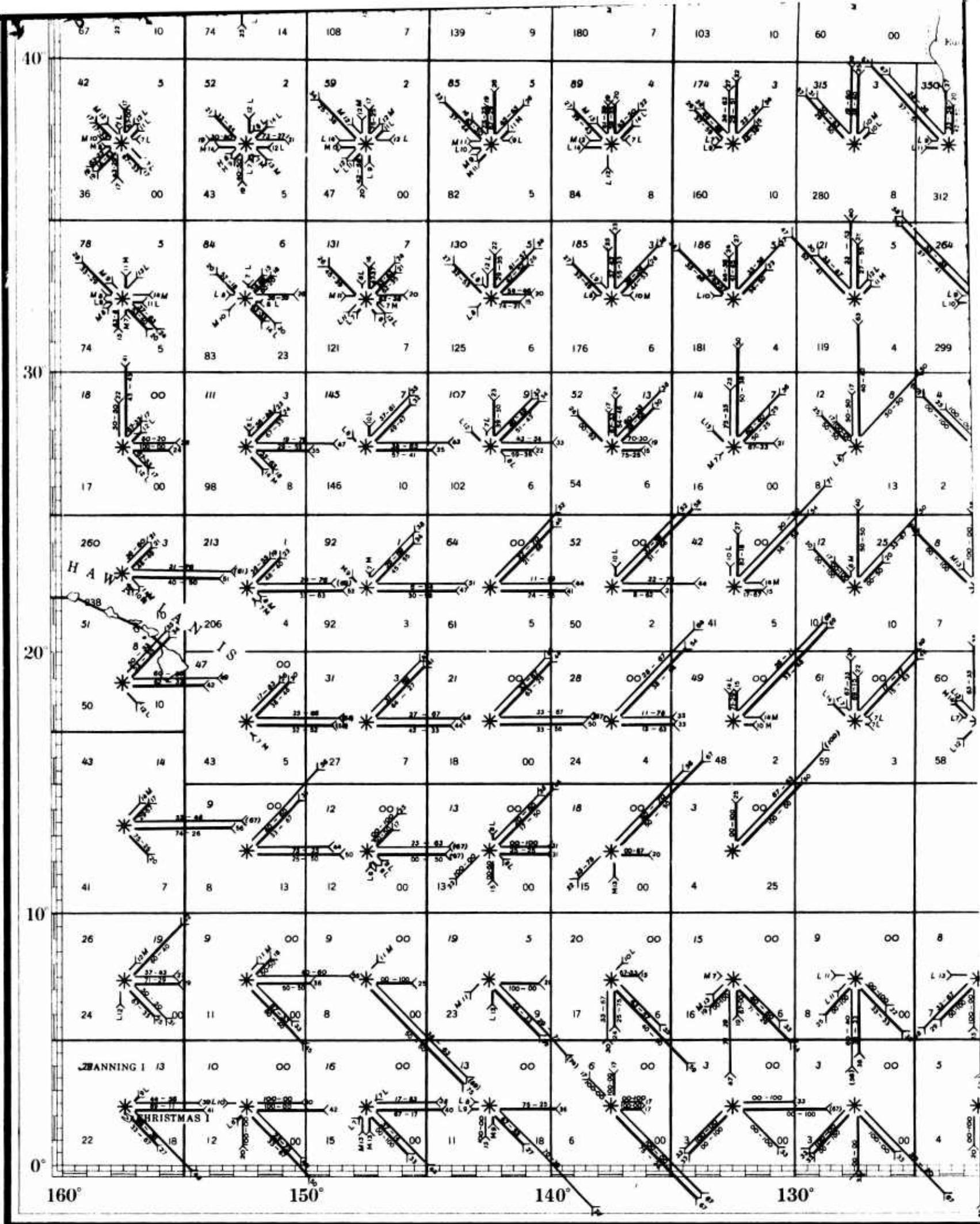
Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south, of which 53 percent were low and 47 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

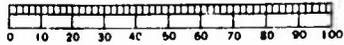




4

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calm, 14 percent were from the southwest and predominately medium, 31 percent were from the west of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

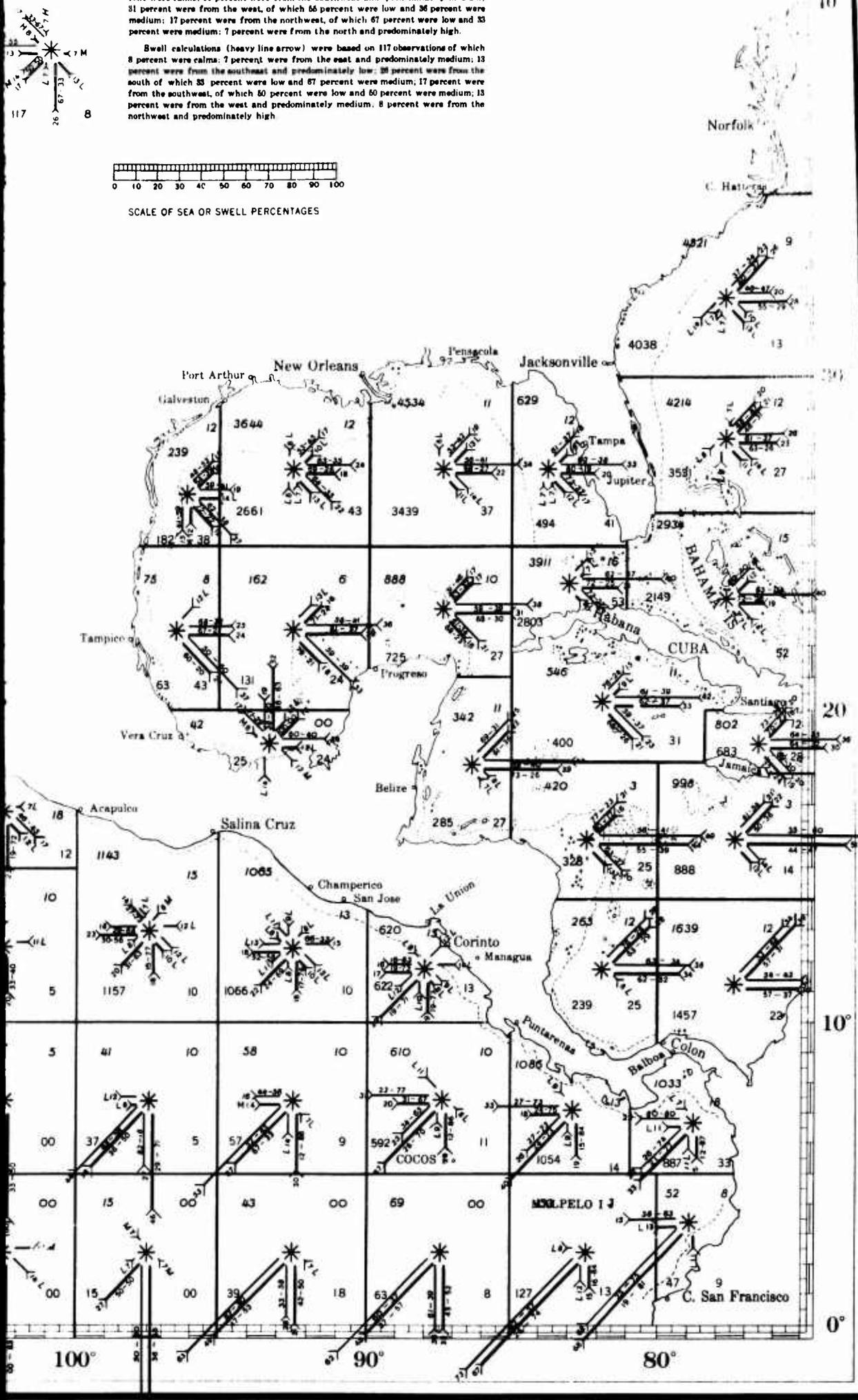
Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calm, 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 38 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium, 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



178
117
26
8



6

160°

150°

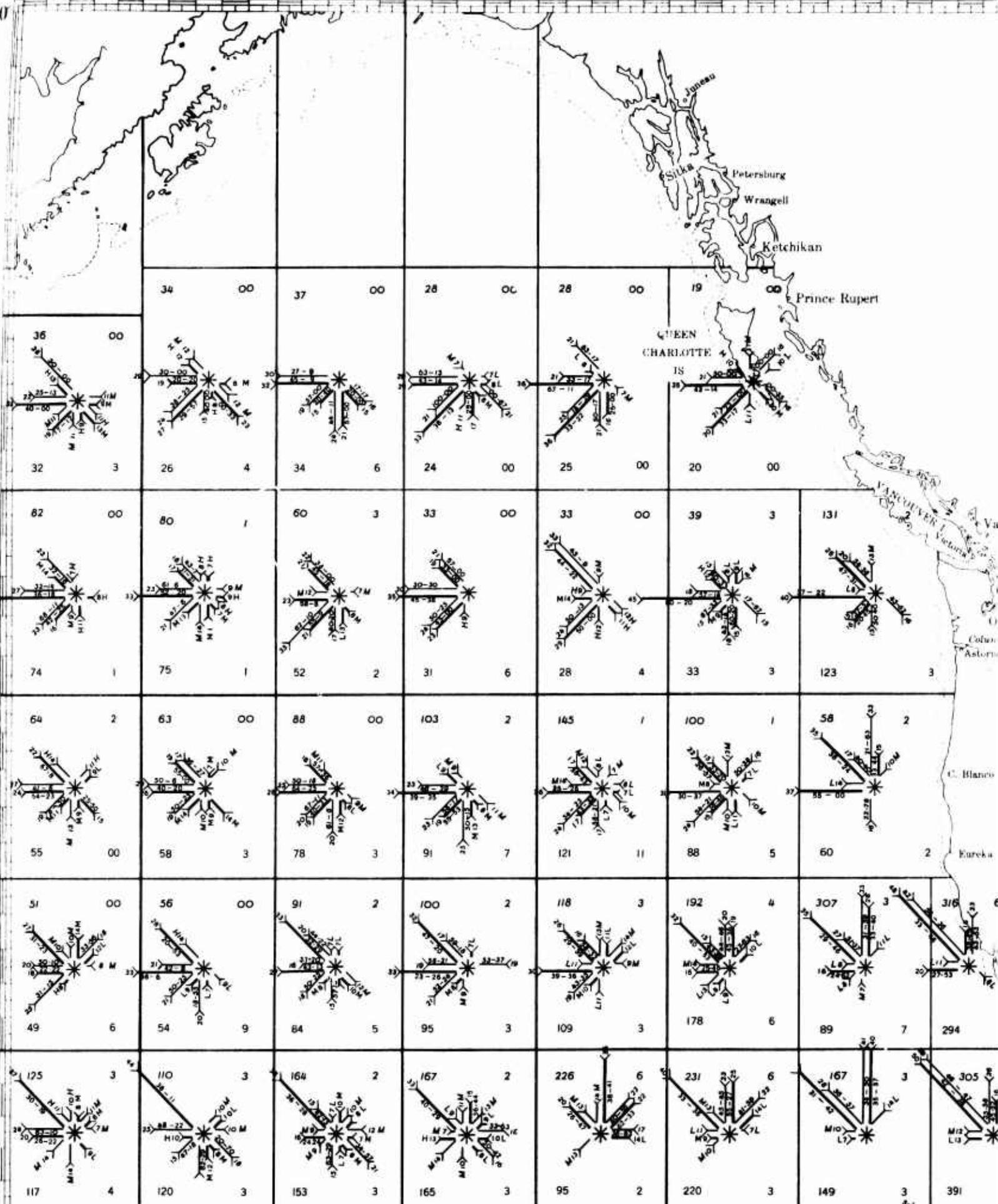
140°

130°

60

50

40



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

OCTOBER

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

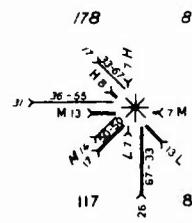
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow, measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 6, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

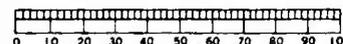
The number of observations for sea is shown in the upper right hand corner of the area and the percent of calms for those observations in the upper left hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows.



Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



PACIFIC OCEAN

WELL CHART

NOBER

SWELLS AND CALMS

from observations made during the month by the cooperating year 1942, the majority of the observations having been taken Office has shown all information in its files, however slight, and graphical presentation will convey a false impression unless information for any given area consider the number of observation and the adjacent roses. THE COMPUTATIONS FOR SEA THROUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE USER, IT SHOULD BE UNDERSTOOD THAT THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE OR PLACE

PRESENTATION

and with figures, by means of an eight point double rose, printed vailed within the areas outlined on the brown base. THE SEA T LINE ARROWS AND SLANTING TYPE, WHILE THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow instances where the number of observations in any direction is 15 additions within that direction may be shown in the usual manner ward which the seas or swells move. The length of the arrow scribed scale and the numeral at the tail of the arrow, gives the wells have been moving from or near the given point. In instances left is shortened as much as necessary and the true percent at the

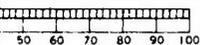
ons within the direction are shown along the shaft of the arrow figure from the center is always the percent of low. The percent of the percentage. When the percent of direction is less than be shown by the letter L, M, or H (meaning predominately low, or). The conditions of seas and swells (low, medium and high) swells, those of amounts 1 and 2; medium seas or swells, those of d above.

pper left hand corner of the area and the percent of calms for umber of observations for swell is shown in the lower left hand vations in the lower right hand corner.

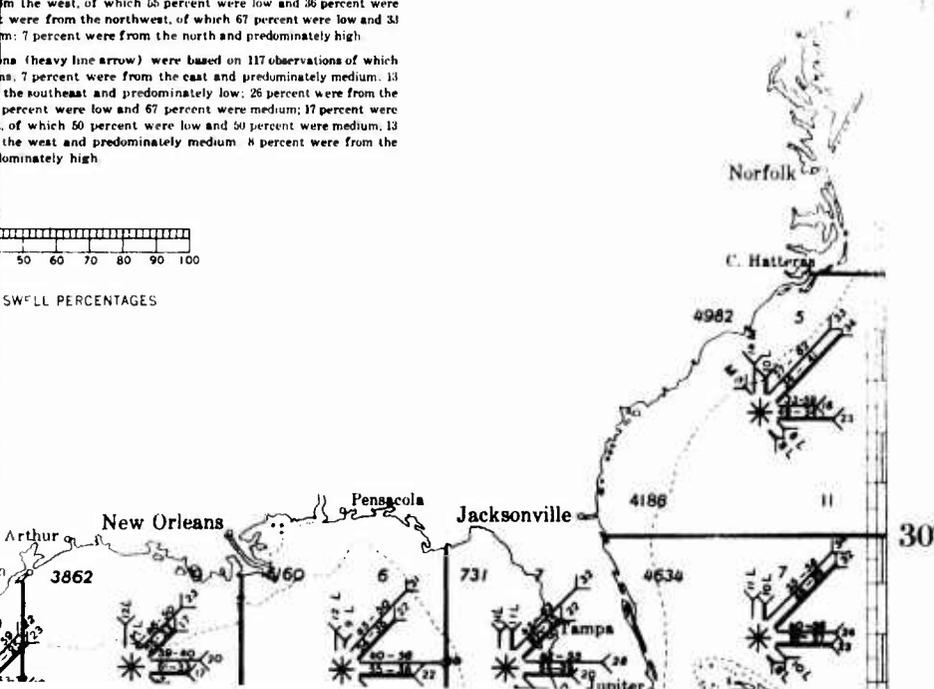
he attached rose should be read as follows

(light line arrow) were based on 178 observations of which 8 percent were from the southwest and predominately medium. m the west, of which 55 percent were low and 36 percent were were from the northwest, of which 67 percent were low and 31 m: 7 percent were from the north and predominately high.

ns (heavy line arrow) were based on 117 observations of which ns, 7 percent were from the east and predominately medium; 13 the southeast and predominately low; 26 percent were from the percent were low and 67 percent were medium; 17 percent were of which 50 percent were low and 50 percent were medium; 13 the west and predominately medium. 8 percent were from the ominately high.



SWELL PERCENTAGES

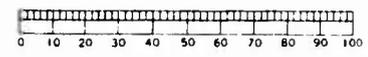
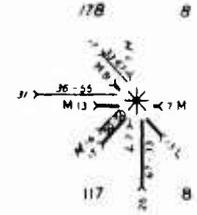


The number of observations for sea is shown in the upper left hand corner of the area. The number of observations for swell, those of amount 3 and above, those observations in the upper right hand corner. The number of observations for swell corner of the area and the percent of calms for those observations in the lower right hand corner.

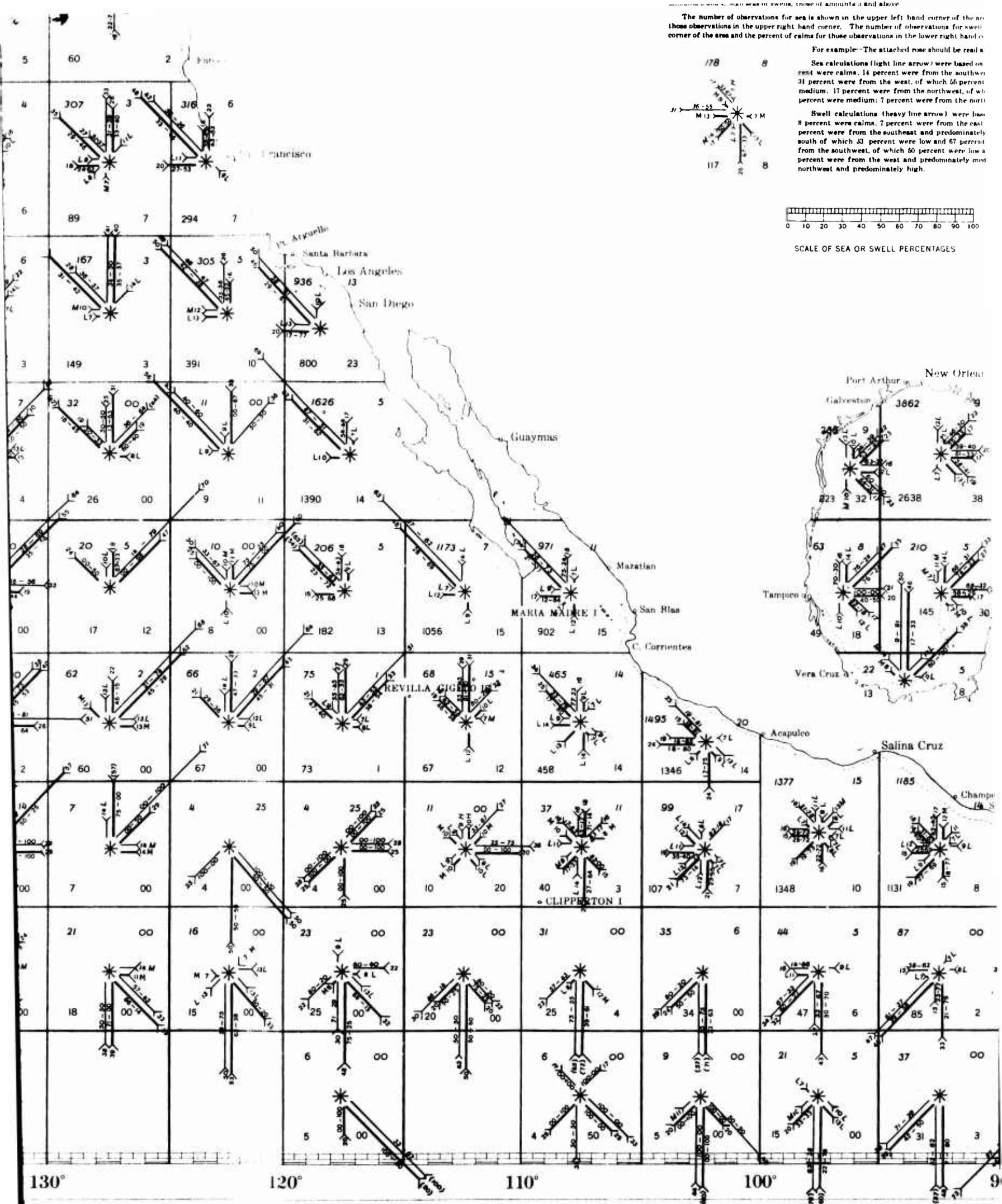
For example - The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations, 14 percent were from the southwest, 31 percent were from the west, of which 56 percent medium, 17 percent were from the northwest, of which 7 percent were from the north.

Swell calculations (heavy line arrow) were based on 8 percent were calms, 7 percent were from the east, 8 percent were from the southeast and predominately south of which 43 percent were low and 67 percent from the southwest, of which 60 percent were low a percent were from the west and predominately mid northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



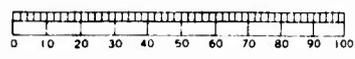
5

Observations for swell are shown in the upper left hand corner of the area and the percent of calms for the upper right hand corner. The number of observations for swell is shown in the lower left hand corner and the percent of calms for those observations in the lower right hand corner.

For example - The attached rose should be read as follows

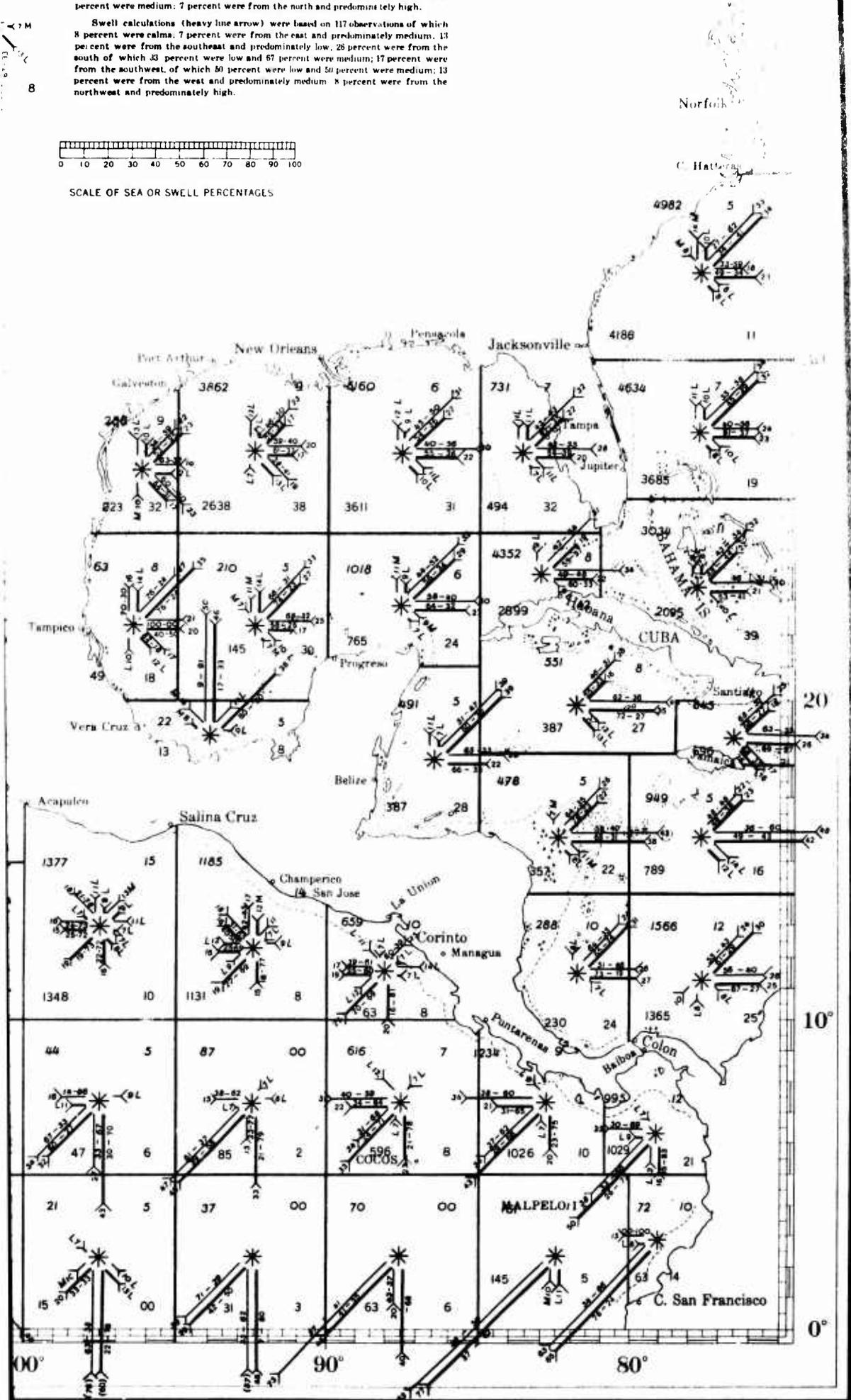
8 Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium, 31 percent were from the west, of which 56 percent were low and 36 percent were medium, 17 percent were from the northwest, of which 67 percent were low and 31 percent were medium; 7 percent were from the north and predominately high.

8 Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium, 13 percent were from the southeast and predominately low, 28 percent were from the south, of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

7 M
8



11

160°

150°

140°

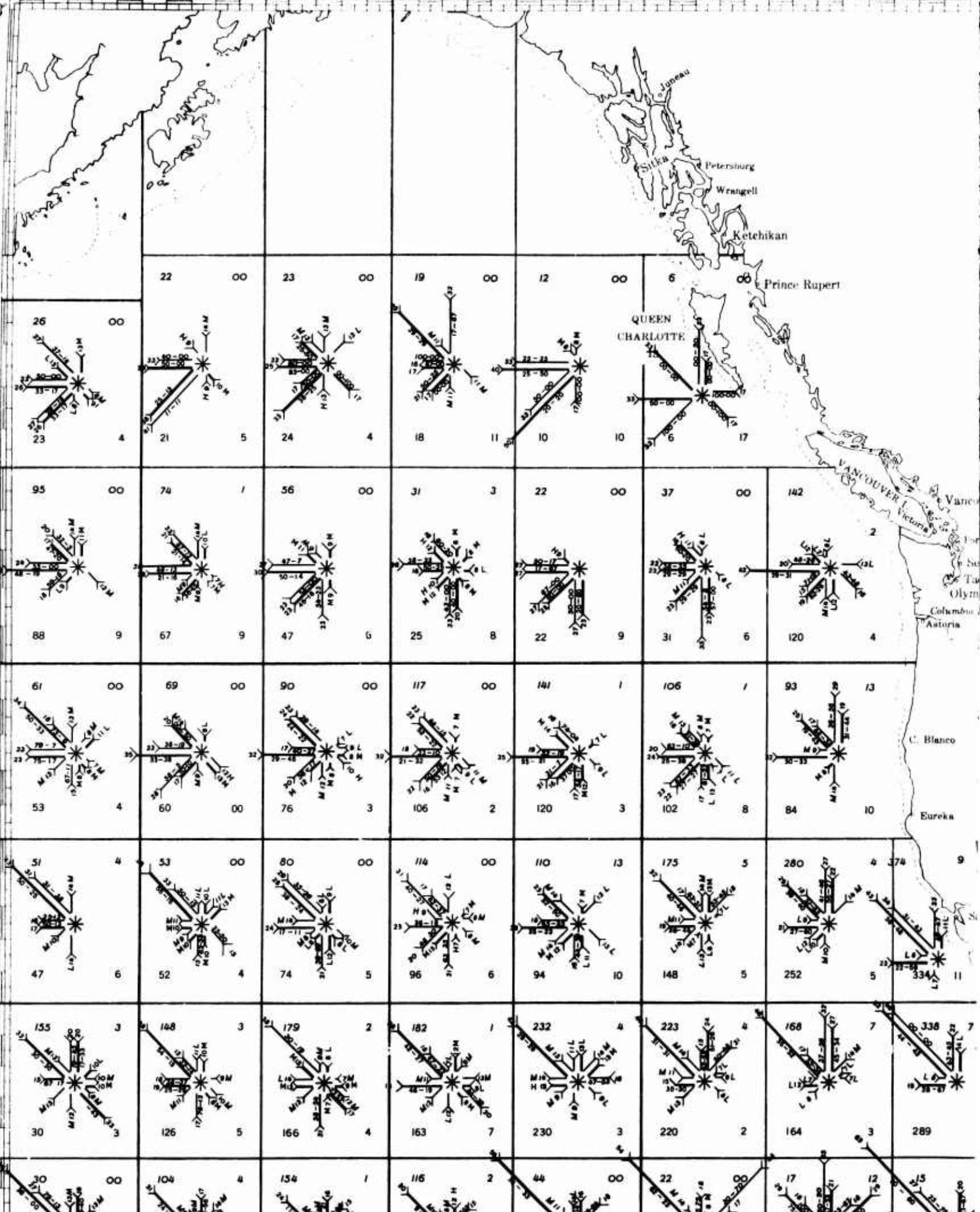
130°

60

50

40

30



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

NOVEMBER

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1908 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent seas. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

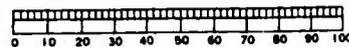
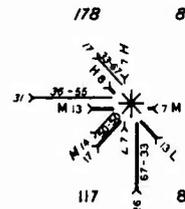
When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 5, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 45 percent were low and 38 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 28 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 80 percent were low and 60 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

San Francisco
San Diego
Los Angeles
Santa Barbara
Pt. Arguello
Guaymas

Blanco
Eureka

San Francisco
334

338
289

15
13

Santa Barbara
Los Angeles
San Diego

839 23
492

13
12

2

Guaymas





PACIFIC OCEAN AND SWELL CHART

NOVEMBER

PREVAILING SEAS, SWELLS AND CALMS

This chart has been compiled from observations made during the month by the cooperating vessels and including the year 1942, the majority of the observations having been taken by the Hydrographic Office. The Hydrographic Office has shown all information in its files, however slight, and where the number of observations is small the graphical presentation will convey a false impression unless the reliability of the information for any given area consider the number of observations. THE COMPUTATIONS FOR SEAS AND SWELLS ARE SHOWN SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE CHART SHOWS AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE THE SAME AT ANY GIVEN TIME OR PLACE.

METHOD OF PRESENTATION

The seas and swells are shown both graphically and with figures, by means of an eight point double rose, printed in black ink on a brown base. THE SEAS AND SWELLS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE CALMS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown if the number of observations in any direction is less than 7. In instances where the number of observations in any direction is 15 or more, the conditions within that direction may be shown in the usual manner. The length of the arrow when placed on the attached scale and the numeral at the tail of the arrow, gives the percent of the seas or swells that have been moving from or near the given point. In instances where the percent cannot be shown, the shaft is shortened as much as necessary and the true percent at the end of the shaft.

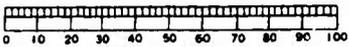
If the number of observations in any direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow. The first figure from the center is always the percent of low. The percent of medium is the remainder of the percentage. When the percent of direction is less than 15, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium, or high) and the figure for direction. The conditions of seas and swells (low, medium and high) are as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

The percent of calms is shown in the upper left hand corner of the area and the percent of seas for each direction is shown in the lower left hand corner. The number of observations for swell is shown in the lower right hand corner of the area for those observations in the lower right hand corner.

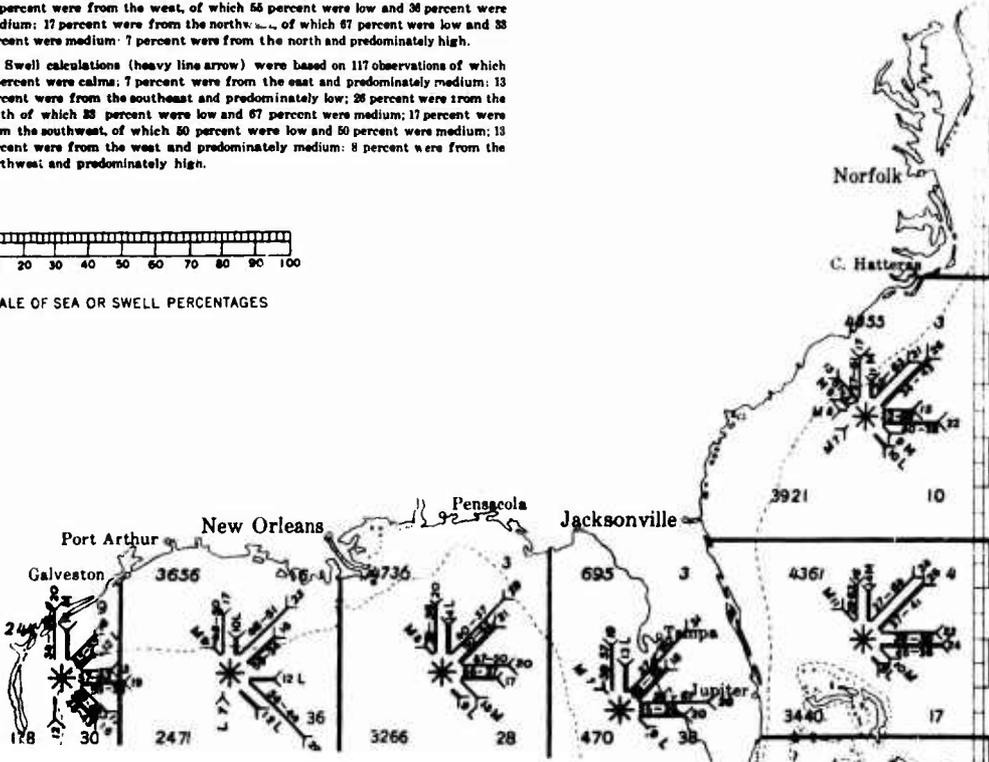
For example—The attached rose should be read as follows:

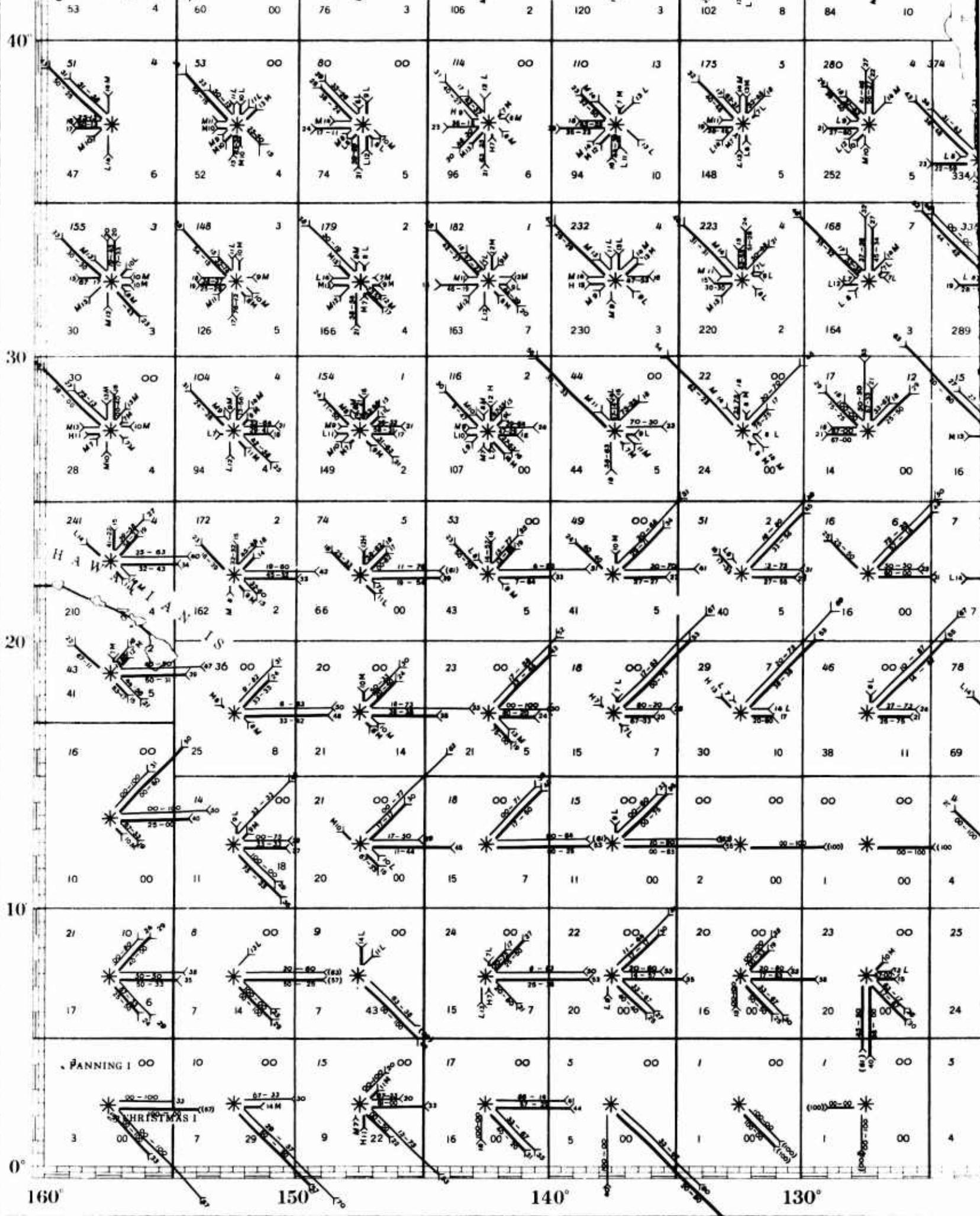
Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 38 percent were medium; 17 percent were from the north, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



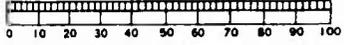
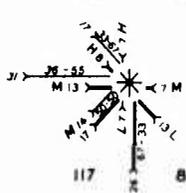
SCALE OF SEA OR SWELL PERCENTAGES



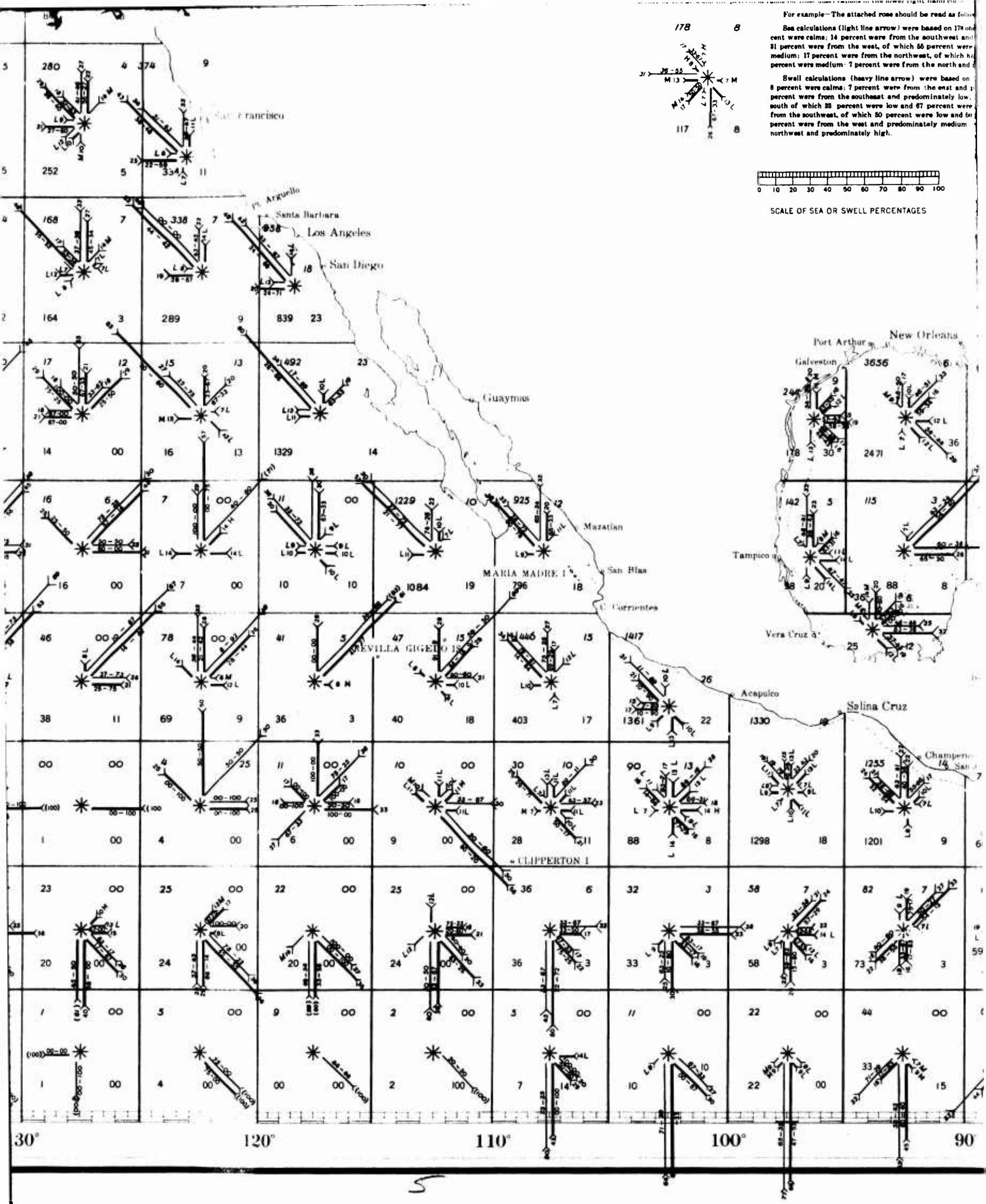


4

For example—The attached rose should be read as follows:
 Sea calculations (light line arrow) were based on 178 observations; 14 percent were calms; 14 percent were from the southwest and 31 percent were from the west, of which 50 percent were medium; 17 percent were from the northwest, of which 67 percent were medium; 7 percent were from the north and 8 percent were calms; 7 percent were from the east and 1 percent were from the southeast and predominately low, south of which 33 percent were low and 67 percent were from the southwest, of which 50 percent were low and 67 percent were from the west and predominately medium northwest and predominately high.



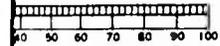
SCALE OF SEA OR SWELL PERCENTAGES



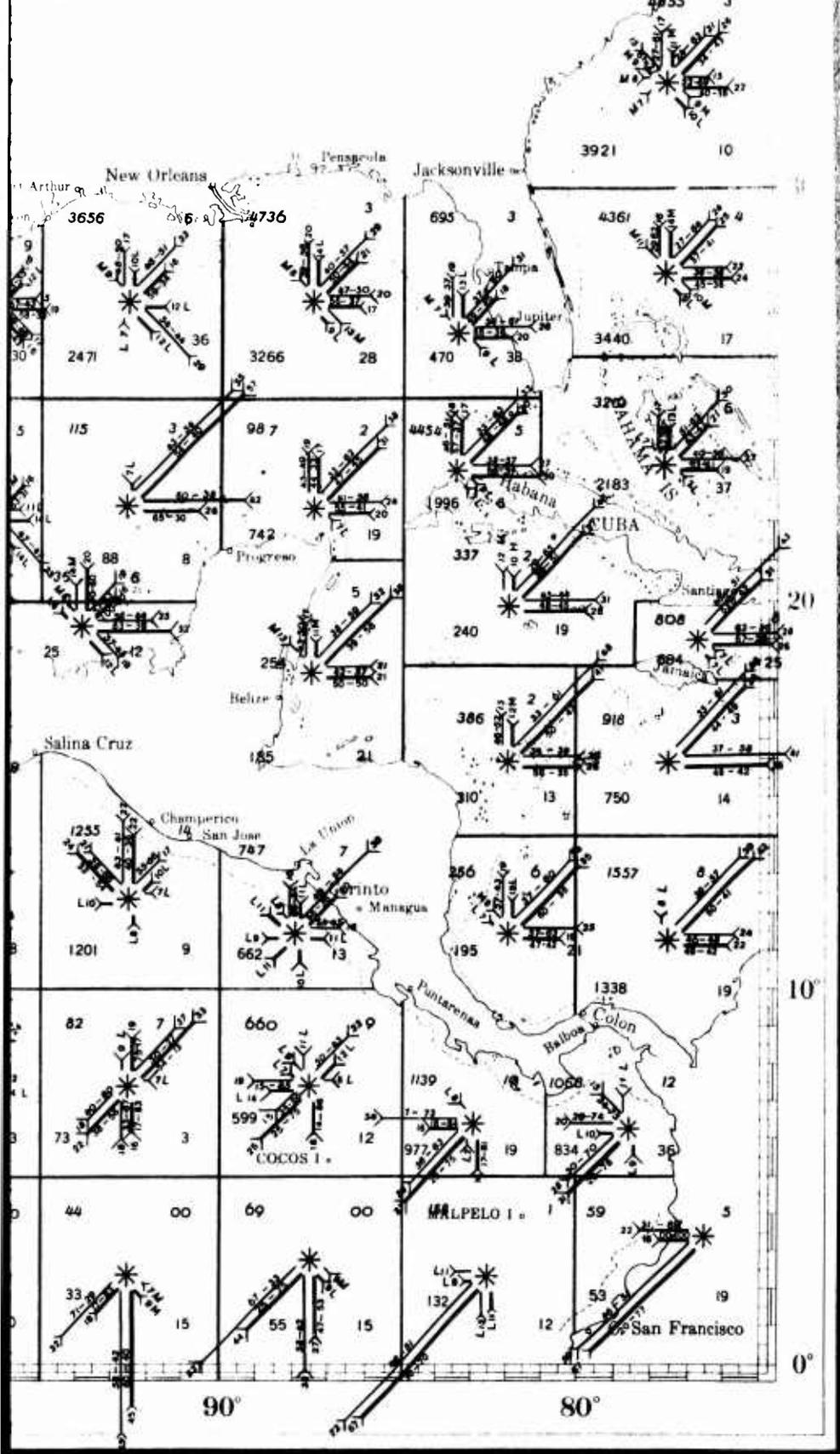
5

... (light line arrow) were based on 178 observations of which 4 percent were from the southwest and predominately medium; 14 percent were from the west, of which 55 percent were low and 36 percent were from the northwest, of which 87 percent were low and 33 percent were from the north and predominately high.

... (heavy line arrow) were based on 117 observations of which 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south, of which 80 percent were low and 50 percent were medium; 17 percent were from the west and predominately medium; 8 percent were from the north and predominately high.



OR SWELL PERCENTAGES



6

160°

150°

140°

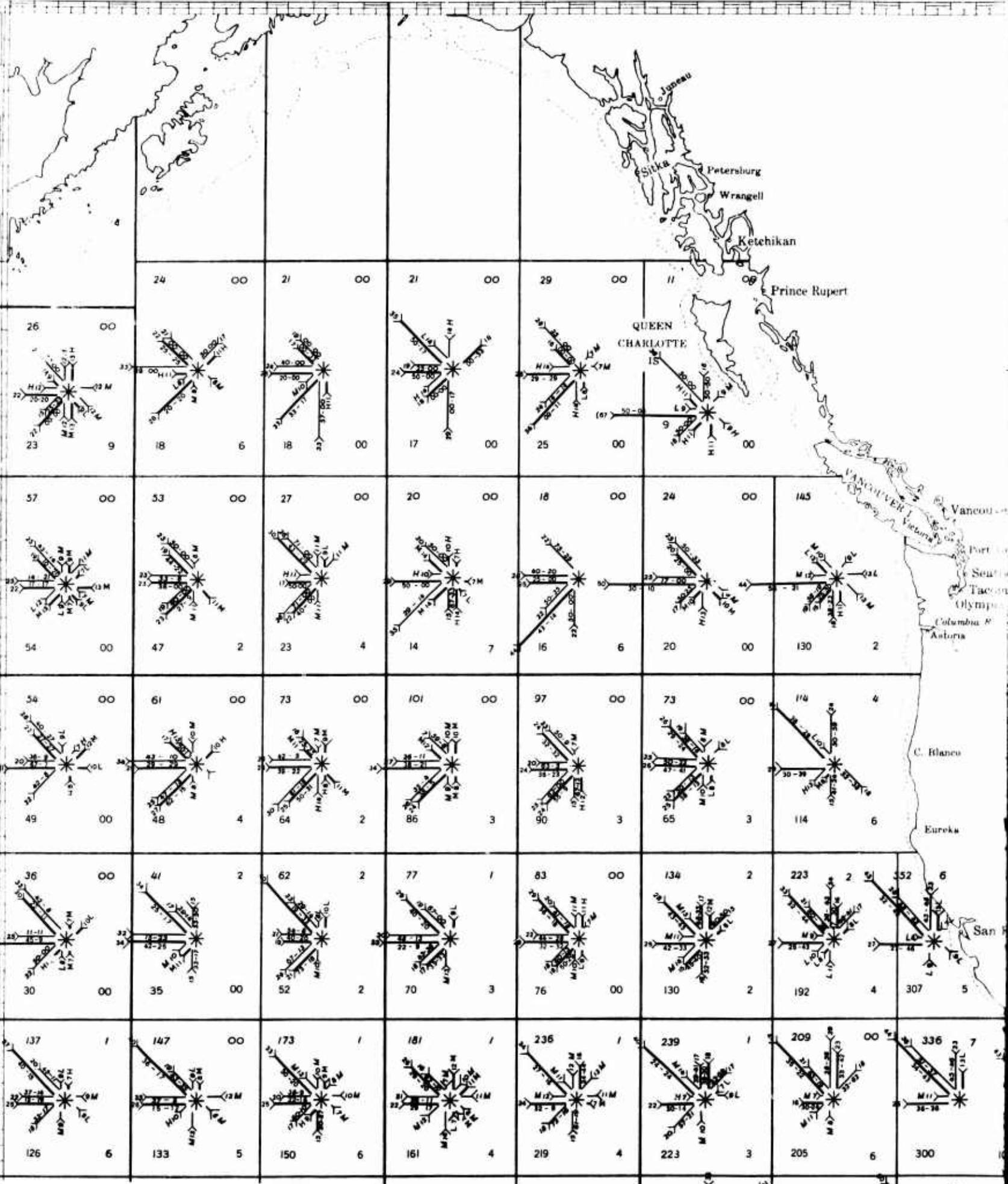
130°

60

50

40

30



120°

110°

100°

90°



NORTHEASTERN PACIFIC OCEAN SEA AND SWELL CHART

DECEMBER

PREVAILING SEAS, SWELLS AND CALMS

The information shown on this chart has been compiled from observations made during the month by the cooperating observers of the Hydrographic Office to and including the year 1942, the majority of the observations having been taken during the years 1932 to 1940 inclusive. The Hydrographic Office has shown all information in its files, however slight, and in some areas where the number of observations is small the graphical presentation will convey a false impression unless examined thoroughly. In evaluating the reliability of the information for any given area consider the number of observations, the geographical position, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL WERE MADE SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE SAME CHART FOR THE CONVENIENCE OF THE USER, IT SHOULD BE UNDERSTOOD THAT THE DIRECTION OF SEA AND SWELL AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT NECESSARILY BE IDENTICAL AT ANY GIVEN TIME OR PLACE.

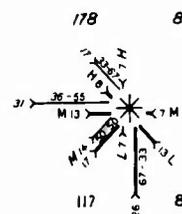
METHOD OF PRESENTATION

The purpose of this chart is to show both graphically and with figures, by means of an eight point double rose, printed in black, the character of the seas and swells that have prevailed within the areas outlined on the brown base. THE SEA CONDITIONS ARE REPRESENTED BY THE LIGHT LINE ARROWS AND SLANTING TYPE, WHILE THE SWELL CONDITIONS ARE REPRESENTED BY THE HEAVY LINE ARROWS AND VERTICAL TYPE. No arrow is shown when the percent of direction is less than 7. In instances where the number of observations in any direction is 15 or over but the percent of direction is less than 7, the conditions within that direction may be shown in the usual manner without the arrow. The arrows point in the directions toward which the seas or swells move. The length of the arrow measured from the center mark, when placed on the attached scale and the numeral at the tail of the arrow, gives the number of times in each 100 observations that the seas or swells have been moving from or near the given point. In instances where the full length of the arrow cannot be shown, the shaft is shortened as much as necessary and the true percent at the tail of the arrow is placed in parenthesis.

When the percent of direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow in percentage of low and medium seas or swells, the first figure from the center is always the percent of low. The percent of high seas or swells within the direction is the remainder of the percentage. When the percent of direction is less than 15 but more than 6, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium or high) beside the percentage figures for direction. The conditions of seas and swells (low, medium and high) within each direction, are defined as follows: low seas or swells, those of amounts 1 and 2; medium seas or swells, those of amounts 3 and 4; high seas or swells, those of amounts 5 and above.

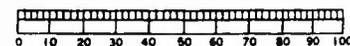
The number of observations for : a is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows:



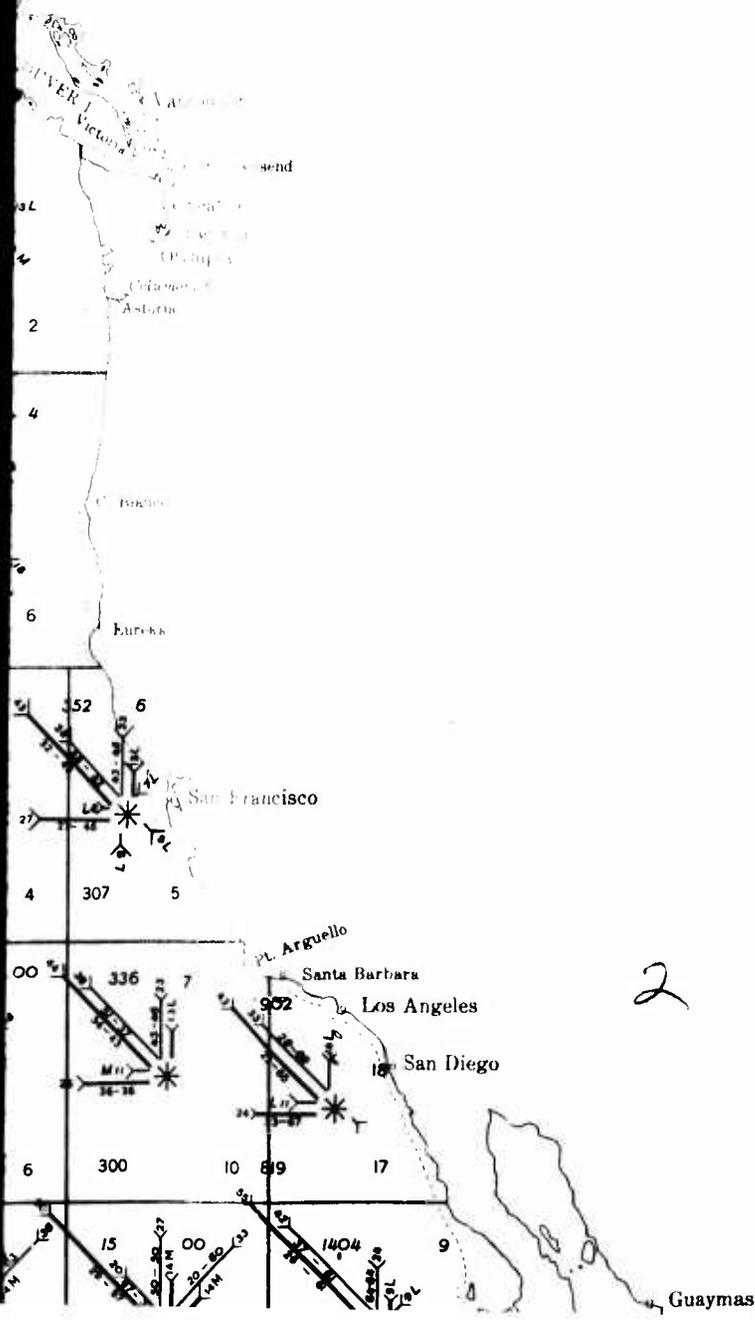
Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

2



90°

80°

60



WESTERN PACIFIC OCEAN SEA AND SWELL CHART

DECEMBER

PREVAILING SEAS, SWELLS AND CALMS

This chart has been compiled from observations made during the month by the cooperating Office to and including the year 1942, the majority of the observations having been taken during the month. The Hydrographic Office has shown all information in its files, however slight, and if the number of observations is small the graphical presentation will convey a false impression unless the user is aware of the reliability of the information for any given area consider the number of observations, the percentages of direction and the adjacent roses. THE COMPUTATIONS FOR SEA AND SWELL ARE SHOWN SEPARATELY AND ALTHOUGH THE CONDITIONS FOR BOTH ARE SHOWN ON THE CHART FOR THE CONVENIENCE OF THE USER. IT SHOULD BE UNDERSTOOD THAT THE SEAS AND SWELLS AS WELL AS THE CONDITIONS UNDER THOSE DIRECTIONS WILL NOT BE THE SAME AT ANY GIVEN TIME OR PLACE.

METHOD OF PRESENTATION

The sea and swell conditions are shown both graphically and with figures, by means of an eight-point double rose, printed in black ink. The sea conditions are shown by the light line arrows and slanting type, while the swell conditions are represented by the heavy line arrows and vertical type. No arrow is shown if the number of observations in any direction is less than 7. In instances where the number of observations in any direction is less than 7, the conditions within that direction may be shown in the usual manner as point in the directions toward which the sea or swells move. The length of the arrow, when placed on the attached scale and the numeral at the tail of the arrow, gives the percentage of observations that the sea or swells have been moving from or near the given point. In instances where the number of observations is less than 7, the shaft is shortened as much as necessary and the true percent at the end of the shaft is shown in parentheses.

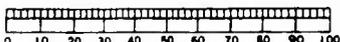
When the number of observations in any direction is 15 or over, the conditions within the direction are shown along the shaft of the arrow. The first figure from the center is always the percent of low. The percent of medium is the remainder of the percentage. When the percent of direction is less than 15, the conditions within the direction are shown by the letter L, M, or H (meaning predominately low, medium, or high). The conditions of sea and swells (low, medium and high) are indicated as follows: low sea or swells, those of amounts 1 and 2; medium sea or swells, those of amounts 3 and 4; high sea or swells, those of amounts 5 and above.

The percent of calms for sea is shown in the upper left hand corner of the area and the percent of calms for swell is shown in the lower left hand corner of the area. The number of observations for sea is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

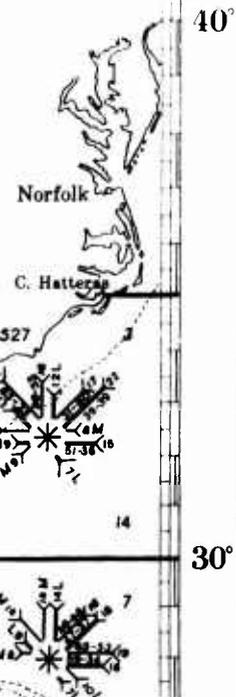
For example—The attached rose should be read as follows:

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms; 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 56 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south, of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES



50

40°

30°

3

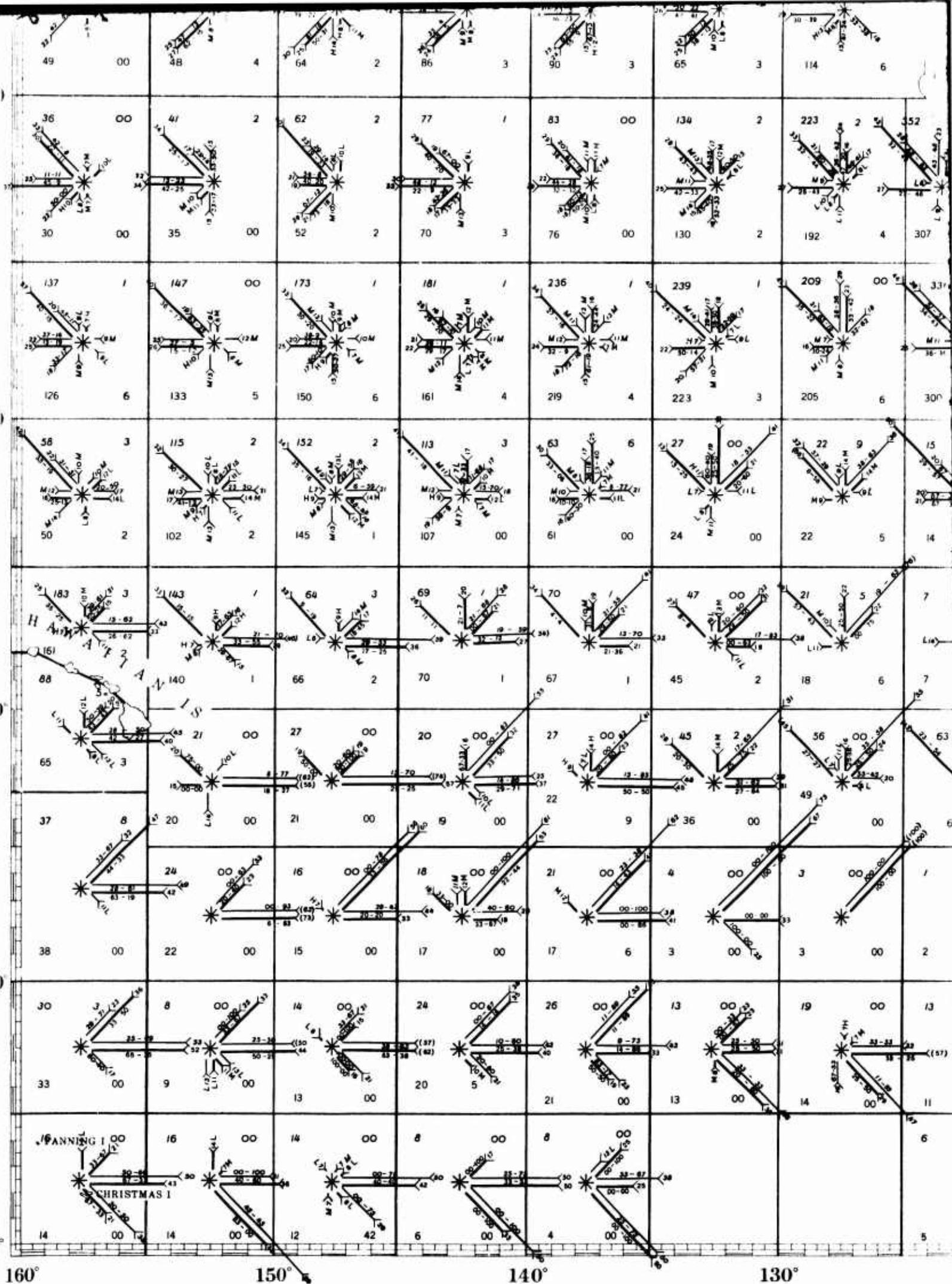
10

30

20

10

0°



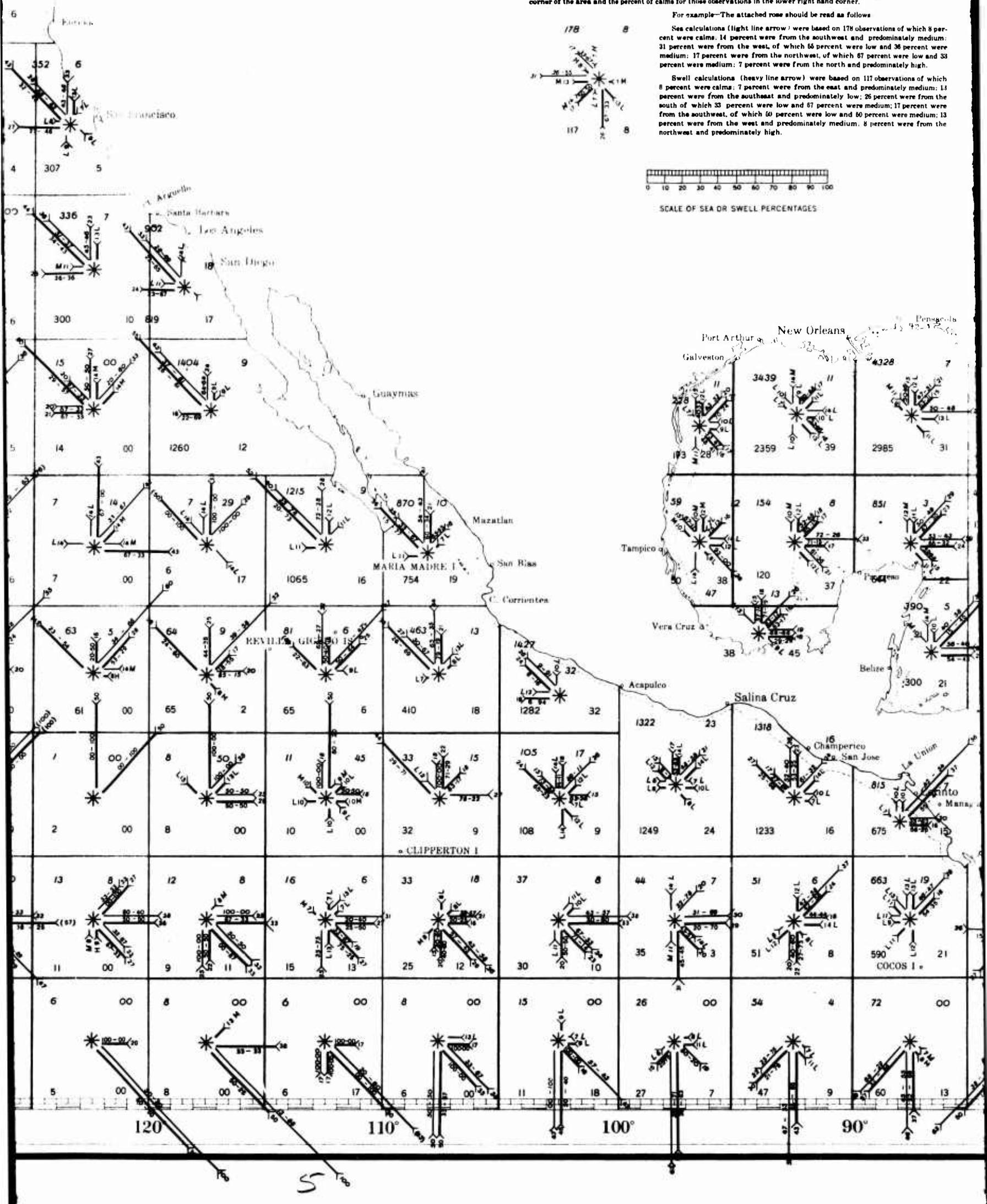
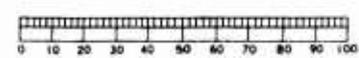
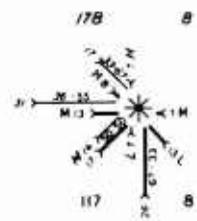
within each direction, are defined as follows: low seas or swells, those of amount 1 and 2; medium seas or swells, those of amount 3 and 4; high seas or swells, those of amount 5 and above.

The number of observations for sea is shown in the upper left hand corner of the area and the percent of calms for those observations in the upper right hand corner. The number of observations for swell is shown in the lower left hand corner of the area and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms. 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 55 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms; 7 percent were from the east and predominately medium; 14 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 50 percent were low and 50 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.

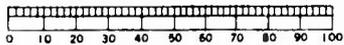


Observations for sea is shown in the upper left hand corner of the area and the percent of calms for upper right hand corner. The number of observations for swell is shown in the lower left hand corner and the percent of calms for those observations in the lower right hand corner.

For example—The attached rose should be read as follows.

Sea calculations (light line arrow) were based on 178 observations of which 8 percent were calms, 14 percent were from the southwest and predominately medium; 31 percent were from the west, of which 66 percent were low and 36 percent were medium; 17 percent were from the northwest, of which 67 percent were low and 33 percent were medium; 7 percent were from the north and predominately high.

Swell calculations (heavy line arrow) were based on 117 observations of which 8 percent were calms, 7 percent were from the east and predominately medium; 13 percent were from the southeast and predominately low; 26 percent were from the south of which 33 percent were low and 67 percent were medium; 17 percent were from the southwest, of which 80 percent were low and 80 percent were medium; 13 percent were from the west and predominately medium; 8 percent were from the northwest and predominately high.



SCALE OF SEA OR SWELL PERCENTAGES

