The Experiments of Weather Instruments & Observations lab.

(First Semester)

ASD / 2nd Stage

2021 – 2022

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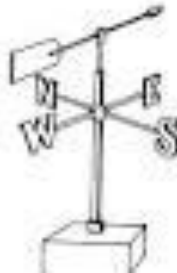Preparing by: L. Nagham T. Ibraheem, L. Ruaa M. Ibraheem

The Wind

The moves of air masses in the horizontal direction, and it moves as a result of the gradient in atmospheric pressure.

Wind measured Instruments:

1. Wind speed measuring devices (Anemometers).
2. Wind direction measuring devices (wind vane).

Anemometer   wind vane

Nddff   ←

Amount of clouds and winds group:

N	Amount of clouds (0-9)

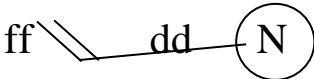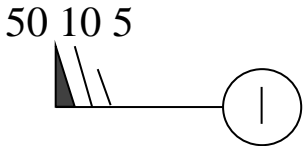| Code No.	N	SKY COVER	5
0	◯	No clouds	
1	◔	One tenth or less, but not zero	
2	◔	Two-tenths to three-tenths	
3	◑	Four-tenths	
4	◑	Five-tenths	
5	◒	Six-tenths	
6	◕	Seven-tenths to eight-tenths	
7	◉	Nine-tenths or over cast with openings	
8	●	Completely overcast (ten-tenths)	
9	⊗	Sky obscured	

dd	Wind direction (01-36)

To set the correct direction we add a zero to the right and draw the direction from outside towards to the station.

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              360
              ___
 270        (   )        90
              ‾‾‾
              180
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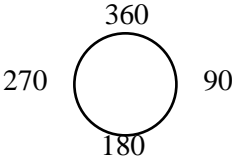
Code table 0877 True Direction, in tens of degrees			
Code figure	Direction	Code figure	Direction
00	Calm (no motion, or no waves)	19	185°-194°
		20	195°-204°
01	5°-14°	21	205°-214°
02	15°-24°	22	215°-224°
03	25°-34°	23	225°-234°
04	35°-44°	24	235°-244°
05	45°-54°	25	245°-254°
06	55°-64°	26	255°-264°
07	65°-74°	27	365°-274°
08	75°-84°	28	275°-284°
09	85°-94°	29	285°-294°
10	95°-104°	30	295°-304°
11	105°-114°	31	305°-314°
12	115°-124°	32	315°-324°
13	125°-134°	33	325°-334°
14	135°-144°	34	335°-344°
15	145°-154°	35	345°-354°
16	155°-164°	36	355°-4°
17	165°-174°	99	Variable, or all directions, or unknown, or waves confused, direction indeterminate.
18	175°-184°		

ff	Wind speed is plotted clockwise from the direction line

50 10 5

Symbol	Description	Symbol	Description
◎	Calm	(barb)	53 – 57 knots
(line)	1 - 2 knots	(barb)	58 - 62 knots
(barb)	3 - 7 knots	(barb)	63 - 67 knots
(barb)	8 - 12 knots	(barb)	68 - 72 knots
(barb)	13 - 17 knots	(barb)	73 - 77 knots
(barb)	18 - 22 knots	(barb)	78 - 82 knots
(barb)	23 - 27 knots	(barb)	83 - 87 knots
(barb)	28 - 32 knots	(barb)	88 - 92 knots
(barb)	33 - 37 knots	(barb)	93 – 97 knots
(barb)	38 - 42 knots	(barb)	98 – 102 knots
(barb)	43 - 47 knots	⸝⸜	Wind direction variable
(barb)	48 – 52 knots	✕—	Wind direction given but wind speed missing

1. In the event that the wind direction is variable, it is drawn in the most frequent direction, as shown in Figure ○— X

2. If the wind direction is lost, we do not draw the wind information.

3. If the wind speed information is lost, the diagram will be as follows

○— X

4. If the wind is calm or calm, the drawing will be as follows ◎

5. The drawing is in knot units, but if it is in m/s units, it is multiplied by 2 to convert to knots.

6. If the wind speed exceeds (100kt.), we write instead of ff the number 99 and add a new group (00fff) and write the value of the real wind speed in three places after 00.

For example if the wind is south at a speed of 125 kt. The clouds cover half of the sky, so the code is as follows: 41899   00125