

Instructions: Please download from Blackboard and read the two posted readings:

- *Isobars and Wind Speed*
- *Jet Streaks and Forecasting Active Weather*

Answer the questions below using these two readings and the PowerPoint, *Winds and Pressure Systems in 3D*.

From *Isobars and Wind Speed*

1. Name the three forces that influence the direction of the wind around the surface low in *Isobars and Wind Speed*.

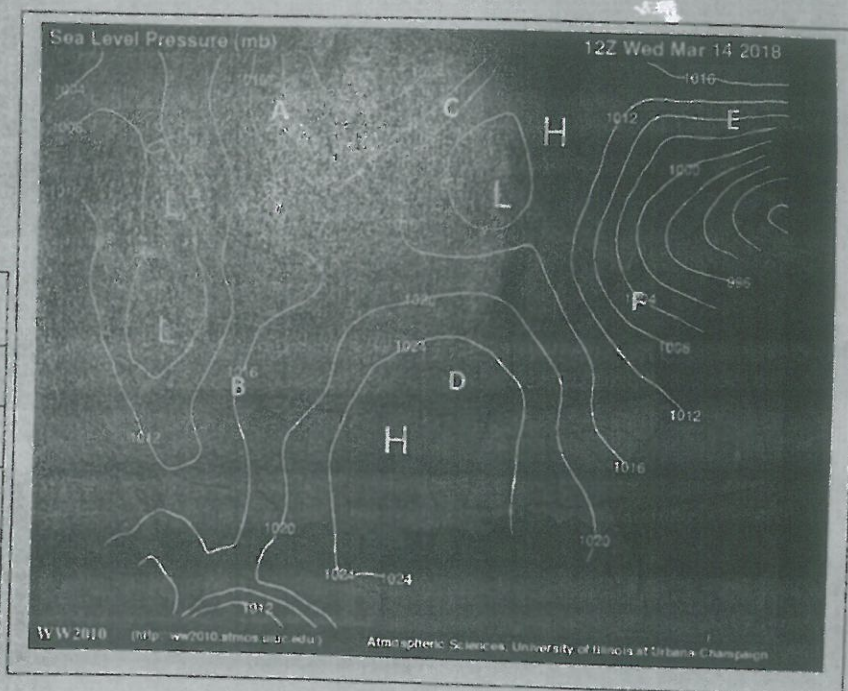
- Pressure gradient force (PGF)
- Coriolis Effect
- Surface friction

2. What is the reason for the very slow wind speeds near the high pressure area in Nebraska?

- The isobars are not nearly closely packed together, and the wind vectors are very small. This causes light winds.

3. Look at the isobar map at the right. Estimate the wind speed for each of the marked locations. Use the hand twist model to estimate the wind directions.

	Direction: From the...	Speed: Light or Strong
A	North West	Light
B	South West	Light
C	North	Light
D	West	Light
E	North East	Strong
F	North East	Strong



From *Jet Streaks and Forecasting Active Weather*

4. How is gradient wind different from geostrophic wind?

Gradient wind is characterized by circulation in anticyclonic direction and centripetal force which is opposite to PGF. Geostrophic wind happens when wind blows parallel to the contours in a straight line with Coriolis effect balancing the PGF. In gradient wind, Coriolis effect is less than PGF.

5. When the article refers to contours, it is referring to lines of equal height above sea level on a constant pressure surface. What is true of the contours on the 300-millibar surface in a jet streak?

The contours on this surface are of equal wind speed.