

FIG. 3. (a) Schematic of transverse ageostrophic wind components and patterns of divergence associated with the entrance and exit regions of a straight jet streak [after Bjerknes (1951)]. (b) Vertical cross section illustrating direct and indirect circulations in the entrance region [along dotted line labeled A-A' in (a)] and exit region [along dotted line labeled B-B' in (a)] of a jet streak. Cross sections include two representative isentropes (dotted), upper-level jet location (marked by a J), relative positions of cold and warm air, upper-level divergence, horizontal ageostrophic components, and vertical motions (arrows) within the plane of each cross section. (c) Schematic of maximum (cyclonic) and minimum (anticyclonic) relative vorticity centers and associated advection patterns associated with a straight jet streak. (NVA represents negative or anticyclonic vorticity advection; PVA represents positive or cyclonic vorticity advection).

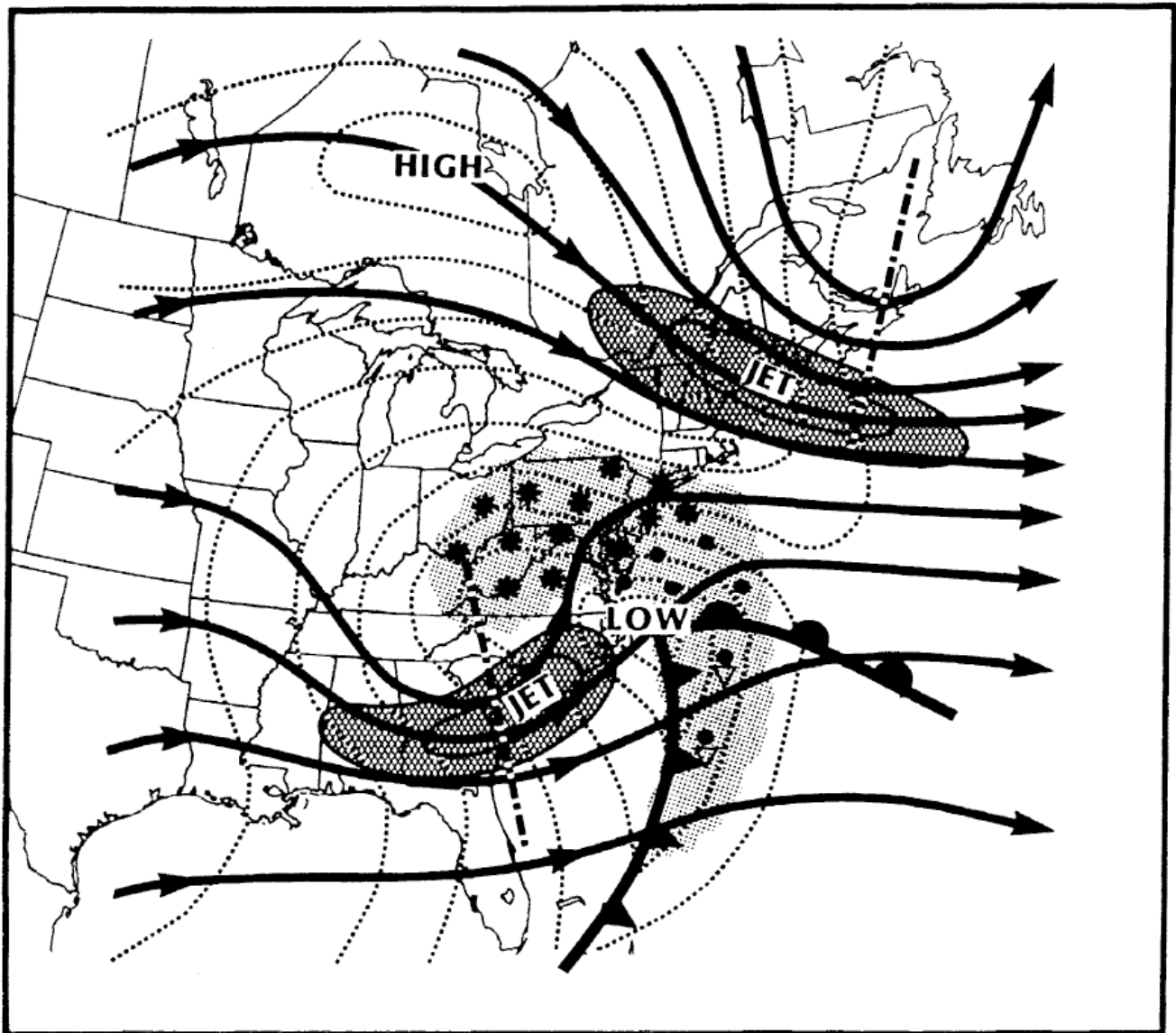
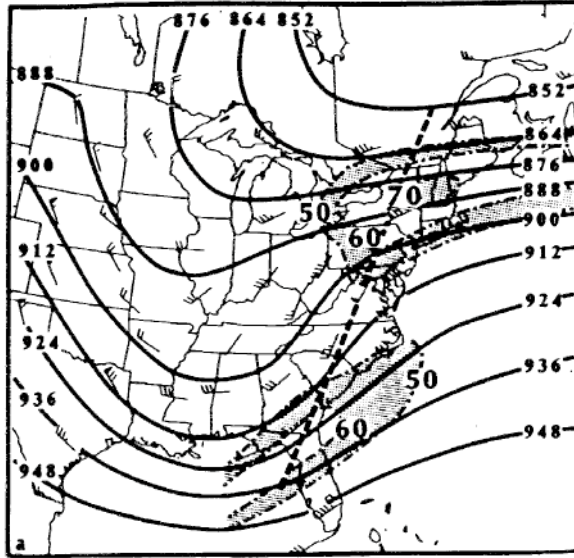
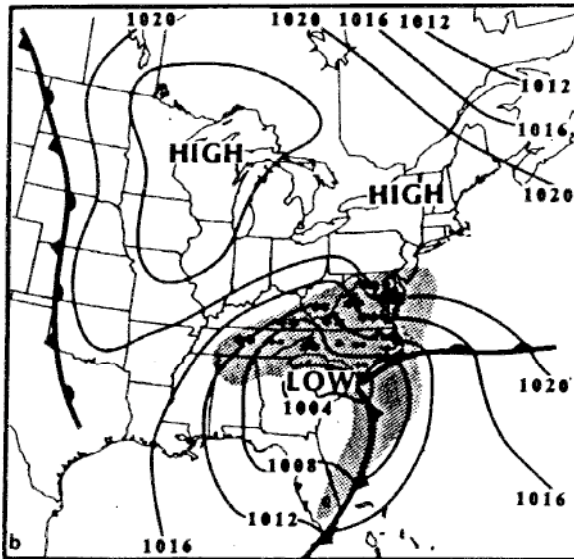


FIG. 1. Schematic of surface cold and warm fronts, high and low pressure centers, sea level isobars (dotted), precipitation (shading — asterisks represent snowfall; dots represent rain), upper-level flow (arrows), upper-level trough axes (dot-dashed), and jet streaks (cross-hatched shading) associated with a “typical” heavy snow event along the East Coast.

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300 MB



SURFACE

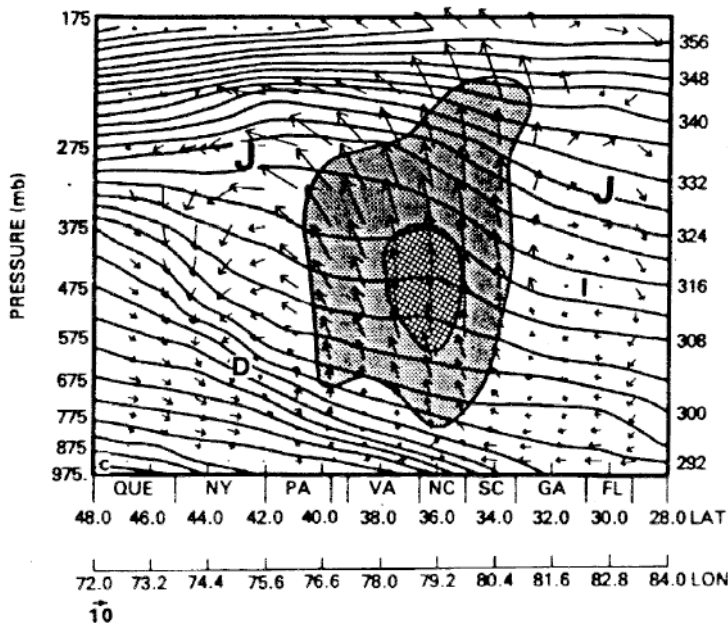


FIG. 12. (a) 300 hPa heights and isotachs. The thick dashed line is the cross section shown in c. (b) Surface isobaric and frontal analysis. (c) Vertical cross section of horizontal ($m s^{-1}$) and vertical motions ($\mu b s^{-1}$) induced by the jet streaks.

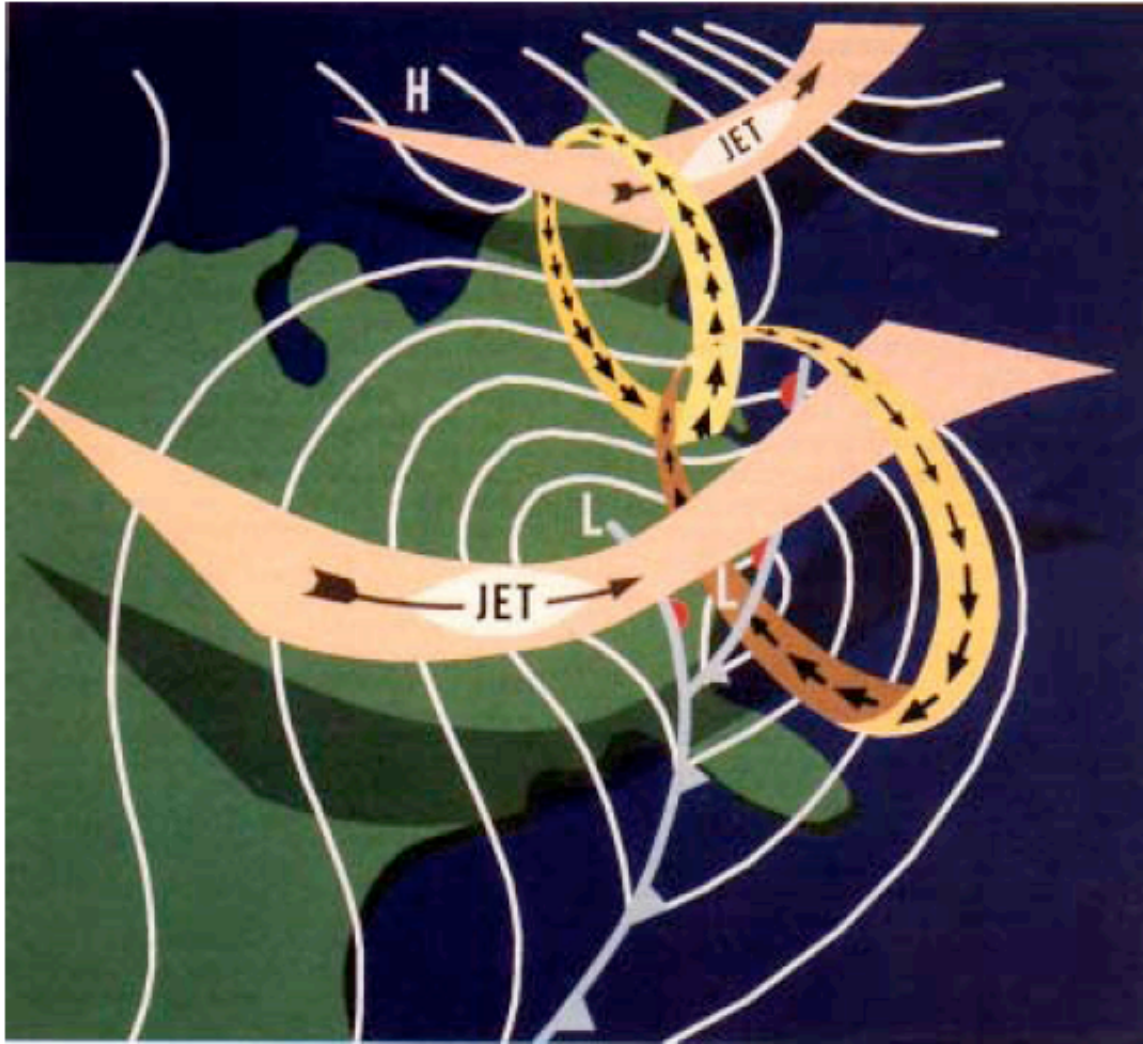


FIG. 16. Three-dimensional schematic of jet-related circulation patterns during East Coast snowstorms. The transverse circulations are associated with diffluent exit and confluent entrance regions of jet streaks embedded, respectively, at the base of troughs moving across the Ohio and Tennessee valleys and across southeastern Canada. Surface low and high pressure systems, isobars, and frontal positions are also indicated.