Weather Note

OBSERVATION OF TWO INTERSECTING RADAR FINE LINES

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During the morning of April 9, 1964, a line of frontal showers located across the southern Florida peninsula was moving toward Miami at 13 kt. Echo tops were measured at 18,000 ft. when the line was just northwest of Lake Okeechobee. During late morning the line began to dissipate, and by 1245 EST only a few cells remained 40 to 80 mi. north and northwest of Miami. However, a fine line, or wind-shift line, was detected to the northwest and was moving toward the station at 13 kt.

Such lines have been observed on many previous occasions and passage by the station is usually coincident with a change in wind velocity, temperature, and relative humidity. Simultaneously on this occasion, a sea breeze front was observed on the radarscope at 1450 EST (fig. 1). This front extended from 30 mi. southwest of the station to the coast line 40 mi. north of Miami. The line to the northwest, which was the leading edge of a residual cool air mass from the thunderstorms, moved southward (fig. 2) through the northern portion of the sea breeze front without immediately destroying the identity of either. However, the sea breeze front dissipated later.

By 1545 EST (fig. 3) the intersection of the two lines was located at 260°, 20 mi. from the station. Several building cumuli were observed visually in that direction.

At 1744 EST, two waterspouts were reported by PIREPS and located about 20 mi. east of Miami. It is theorized that they occurred in the occluding zone of the two air masses and that the funnels were aloft, since the pilot reports did not indicate they reached the surface.

[*Received May 11, 1964; revised November 17, 1964*]

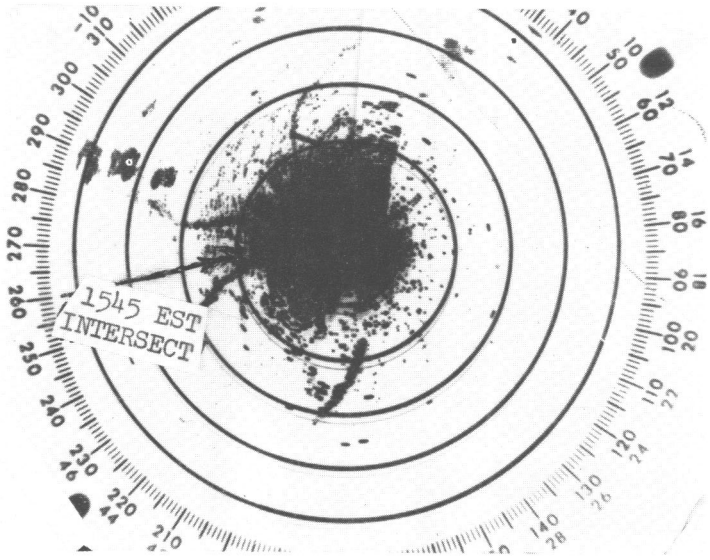

FIGURE 2.—Radarscope at 1518 EST showing the wind-shift line from the northwest approaching the sea breeze front.

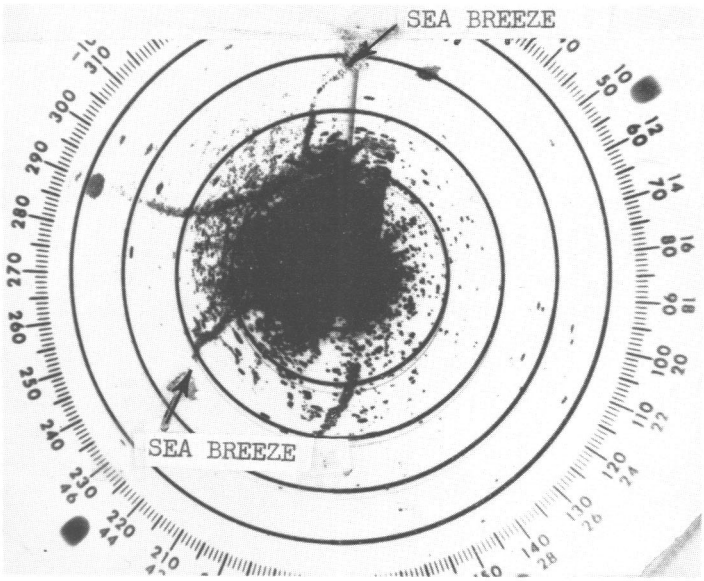

FIGURE 1.—Photo of radarscope at Miami, 1450 EST, April 9, 1964 showing the sea breeze front and a wind-shift line to the northwest.

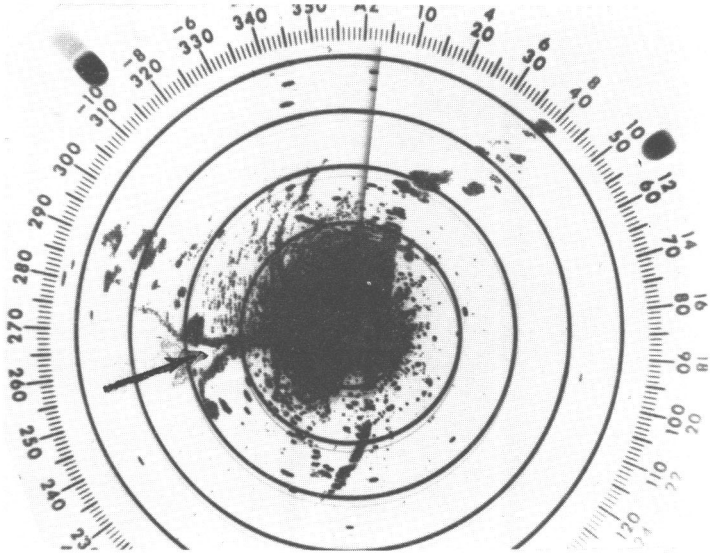

FIGURE 3.—At 1545 EST the wind-shift line had intersected the sea breeze line about 20 mi. west of the station. Neither line was immediately destroyed.