

## The February 1972 Eastern Snow Conference Weather Experience at Oswego, New York

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### ABSTRACT

Both the 49th and 29th Eastern Snow Conferences (ESC) met in Oswego, New York, on the 3rd and 4th of a month. In 1992 the meeting was in June, while in 1972 the meeting was in February, thus conforming to the long-established custom of winter meetings. Rigorous winter weather around and during the 1972 conference became a factor swaying many members to favor a more congenial meeting month.

The February meeting came at the close of a heavy snowstorm episode. This period began during 25 January and was followed by nearly 11 days with a wide variety of winter weather, climaxing at the end in the severe blizzard conditions during the meeting. Weather conditions of the entire nearly 12-day period are summarized with emphasis on the conference days. Some photographs from reproducible color slides aid in portraying weather happening at the time of the 29th ESC.

### DEDICATION

Elmer F. Loveridge (1894–1991) remained actively dedicated to weather and weather-related matters into his 98th year. He was gifted with sharp memory for detail and he often used this gift to relate prior weather happenings to ongoing events.

As his personal mission, he observed and recorded Oswego weather in great detail. His records continued Oswego climatology long after the United States Weather Bureau (now the National Weather Service) closed the Oswego Station in the early 1950s, followed by his own retirement in 1953. He developed and maintained a continuing interest in the

phenology of the Oswego area into his 80s (Sykes, et al., 1971).

Beginning in 1962, and through the 1970s, he offered opinions and advice regarding lake-effect snow conditions. His extensive Oswego experience enriched the planning and programming of these lake-effect studies. He was especially supportive of the instrumented field and observer networking, including extensive school district student participations. It was a genuine honor to have a professional with such dedication, high standards, and unselfish sharing of his full resources as a personal friend for nearly 30 years.

### INTRODUCTION

“This will be a good conference on the banks of Lake Ontario, where they really have snow!” So wrote Secretary Gordon R. Ayer in his notice about the twenty-ninth annual meeting of the Eastern Snow Conference at the Holiday Inn in Oswego, New York, for February 3–4 (Oh, and the 5th and 6th, too) 1972. Gordon had faith in what he had heard about Oswego weather (Sykes, 1972a). Alas, he had not been at the previous 24 June Executive Committee meeting in Oswego, so he did not know of the interchange between ESC President, Donald McMullen, and the local arrangements chairman, Robert Sykes, who in responding to Don’s query: “Will there be any snow?” unhesitatingly answered: “Your conference will be able to get in, will have snow, but will not be able to get out!” After some historical commentary (Sykes, 1972a&b) there follows a shortened account of major weather events leading to and during the 1972 ESC Oswego meeting.

## Background

Reviews of precipitation comparative data (U.S. Dept. of Commerce, 1943 & 1945) extending back into the middle of the 19th century suggest that a period of relatively heavy precipitation occurred during the 1850s and extended through the 1860s. Despite incomplete records and uncertainties about methods used to measure precipitation, especially the snowfall segments, reviews of associated cold season temperature records suggest that snowfall amounts were relatively high during this 19th century period. Review of Oswego snowfall data from 1884/85 through the 1987/88 season (Sykes, 1988) suggests that the 30-year period beginning in 1958/59 was also extraordinary for average seasonal snowfalls. The ESC meeting in Oswego occurred in the 1971/72 snowfall season, nearly halfway through that period.

Truly, the 1971/72 snowfall season itself was remarkable. While snowfall amounts varied considerably in and around the Oswego area (Sykes, et al., 1971 and 1972; Sykes, 1972b), the total snowfall figure selected for the season was 824 cm (324.3 in.) at a location on the east-central side of Oswego City.\* Among the unusual aspects of the 1971/72 winter season were two 254-cm (100-in. plus) snowfall months, back-to-back; respectively, January

with 353.9 cm (139 in.) and February with 256 cm (100.8 in.) (Sykes, 1988). The totals above are quite substantial, considering that the surface of Lake Ontario is at about 75 m (246 ft) above mean sea level and the observing sites are no higher than about 15 m (50 ft) to about 44 m (144 ft). Prior to the snow storminess at the time of the ESC there were examples of a number of types of snowfalls usual to the Oswego area. These included those common to the northeast USA but also lake/land breeze situations; lake-effect snowfalls with varied snowband arrangements; snowbursts; blizzard conditions; and blizzard bursts (Sykes, 1978).

Windy conditions pose tough problems for depth determinations. A methodology using average snowflake sizes, average horizontal visibilities and allowances for blowing and drifting snow has given attractive depth estimation results, as reported in earlier ESC proceedings (Sykes, 1966; 1969; 1972b; and others). Of course, a disadvantage of some estimation methods depending upon visibilities is the need for frequent observation at all hours. During the 12-day period, 25 January through 5 February, extensive and intensive observation in considerable detail was performed. During active snowfall or storm periods, observation time intervals were often minutes apart. Entries for most observations usually included sky, current weather, visibility, wind direction and wind speed, pressure (when particularly vital), temperature, snowflake sizes and percentages, snow crystal types and sizes, and remarks. During this 12-day period, observations averaged more than 60 per day.

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\*Original data were observed and rendered in U.S. units; therefore, conversions are made here as feasible. Wind speed data were obtained from wind equipment at an elevation of about 10 m (34 ft), a standard height.



*Figure 1. Swells and waves against Oswego Breakwater on 25 January, 1972. Lighthouse is dimly visible on left center through light snow.*



*Figure 2. Evening of 30 January 1972. Snow overhangs are up to 1 m (about 3.3 ft). Snowing lightly. Vertical post is 9.6 × 9.6 cm and heavily encrusted with snow. This kind of sticking is common during windy lake-effect conditions, and is helped by supercooled water. This soon freezes.*

### **TWELVE DAYS TO REMEMBER: PHASE 1 OF 3**

January 25th began mild with the temperature at +7°C (44°F) and winds from south to southwest, averaging 70 km/hr (40 mph). Following a cold frontal passage, gale winds developed over Lake Ontario near Oswego, building the biggest waves seen since early December 1968. Figure 1 shows the Oswego breakwater as viewed from the college at about 1100 hours when lake waves were so high that water estimated at 2 m (6 ft) thickness was crossing over. During the forenoon and early afternoon there were spits of snow, but the ground remained bare. At 1415 an arctic front passed the area. Within less than 15 minutes visibilities ranged from 15 to 23 m (50 to 75 ft), or less. High winds, falling temperatures, heavy falling snow and visibilities often near zero persisted much of the time into midmorning of 26 January.

After a few hours “relaxation” came the next major event, a snowburst (very heavy snowfall with very light winds and little or no evidence of drifting). The main part of this event occurred from 1245 through 1615 hours. The heavy snowfall was characterized by very light actual surface wind, large snowflakes, and rapid snow cover accumulations (e.g., 12 cm [4.75 in.] in one 30-minute interval) (Sykes, 1972b; Sykes, 1972c). Even in the absence of blowing or drifting snow, horizontal visibilities ranged from as low as about 2 m (6 ft) to occasionally as high as 45 m (150 ft). During much of the 3.5-hour period snowflake sizes ranged from 0.95 cm to at least 1.3 cm (3/8 to 1/2 in.).

While there were snowfalls through the rest of January, the heaviest period occurred during most of the 30th and extended to about 0900 of the 31st. Figure 2 from January 30 shows the lee side of the lead author’s house in Southwest Oswego, with its overhanging-roof snow and snow sticking to its



*Figure 3. Early afternoon of 31 January. Some blowing and drifting continues. View toward SE in Southwest Oswego. Snow overhangs and drifts emphasize the wintery appearance.*

vertical sides. Five days and 18.5 hours, or 138.5 hours to the end of January, produced 280 cm (112.2 in.) of snowfall. Figure 3 shows conditions at the same residence during one of the few no-precipitation, sunny intervals within the entire 12 days. The overhanging snow on the lee side of the house, the drifting, the suggestions of deep snow cover and the general bleakness are evident.

#### **TWELVE DAYS TO REMEMBER: PHASE 2 OF 3**

This phase extended from about 0900 of 31 January through about 1430 of 3 February. Only about 8.4 cm (3.3 in.) of snowfall was measured (Sykes, 1972b). Temperatures generally remained slightly below freezing, occasionally rising by a degree or so above freezing. Thus, there was a good deal of settling and thinning of the snow cover due to melting and evaporation factors. Most conferees arrived on Wednesday, the 2nd, amidst these mild conditions. There was a bit of occasional light rain but mostly light snow at temperatures near freezing. The conference began as scheduled on Thursday morning, the 3rd, with mild weather continuing as a kind of mix of occasional very light rain and light

wet snow. This condition extended until about 1430. This quiet phase ended with the change that started at about 1430 on the 3rd.

#### **TWELVE DAYS TO REMEMBER: PHASE 3 OF 3**

This final phase (Part 1 of Phase 3) began with intermittent wet snow that became continuous wet snow by dark. By the time the usual ESC banquet (at the end of the first conference day) was over at near 2200, there was just about 28 cm (10 in.) of new snow cover. With the temperature at or just under freezing, the snow settled rapidly. By 0200 of Friday the 4th an arctic frontal passage brought a sharp wind direction change from southeast to west, falling temperatures and blizzard-like snow conditions. Average wind speeds were up to 70 km/h (40 mph) and higher at times by 20 to 40%. Squall-like conditions continued. Most conferees were not bothered within the Holiday Inn, although the "locals" had to contend with snow showers and the usual blowing and drifting conditions as they arrived for the beginning of the 3rd and final session, scheduled at 0830. Temperatures had fallen to  $-5^{\circ}\text{C}$  ( $24^{\circ}\text{F}$ ). By 0900 the squally conditions intensified,



*Figure 4. Shoreline view from SUNY, College at Oswego location near 1520, 4 February, toward the north. Beyond Ray Falconer can be seen shore zone ice and hummocks, only extending into the lake by 8 to 16 m (25 to 50 ft).*

and visibilities dropped down at times to 50 m (c. 165 ft). As lunchtime approached, nervousness increased although most conferees stayed. By midmorning an active snowband with roughly a west/east axis had fully developed over Lake Ontario and by 1100 was beginning to envelope the city. Close to noon the city was nearly at a standstill. Except for one road to the southeast (and Fulton), traffic in and out of Oswego ceased; that road was more or less kept open by a tractor.

Surprisingly, reports received at the ESC "center" indicated that the sun was visible some 12 km (9 mi.) to the northeast and at the same time 15 km (11 mi.) to the southeast. At noon the band of really heavy snowfalls and chaotic action was perhaps 8 km (5 mi.) wide. As the afternoon lengthened, so did that band of heavy snow activity widen and extend farther inland. From about 1230 to nearly 1500 heavy squalls continued incessantly with almost continuous "whiteout" conditions (visibilities to 10 m [33 ft] or less) in thick falling snow and heavy blowing snow. Conditions improved drastically at 1500, end of Part 1 of Phase 3, in the conference area as the heavy snow moved to the north. Light snow continued but visibilities ranged up to 3 km (2 mi.). In Liv Lansing's 4-wheel drive vehicle, a field party including Ray Falconer and Bob Sykes went 3 km (2 mi.) to the

lake shore. Figure 4 shows Ray striding toward the shoreline. The gray sky beyond Ray is the southern edge of snow-producing clouds with the heavy band of snowfall underneath. Upon returning to the Holiday Inn a caravan of several cars formed. With Liv in the lead, and with extra passengers, the group took off at about 1630 toward Fulton, Syracuse and beyond. What happened to them is another tale, but they all survived to tell their own individual stories.

The rest of us settled in; food and refreshments were good. The view from the dining room on the west side of the inn was across the river toward a well-lit part of the city. Suddenly, near 1745, the lights across the river, some 300 m (nearly 1000 ft) distant, blurred and then disappeared. Even the lights adjacent to the inn dimmed to faint glows. So began the final stormy action part (Part 2 of Phase 3) in the 12 Days to Remember. With few breaks, Part 2 lasted for about 22 hours. Parts 1 and 2 combined to be called the Eastern Snow Conference Blizzard or, the Blizzard of '72 at Oswego, New York (Sykes, 1972a; Sykes, 1973).

Generally there was no separation of heavy squalls and whiteouts to make up this blizzard-burst period. Breaks in the action were usually 5 minutes or less. Snowflakes averaged near 1.3 cm (0.5 in.). "White hell" was the common description. Telephone

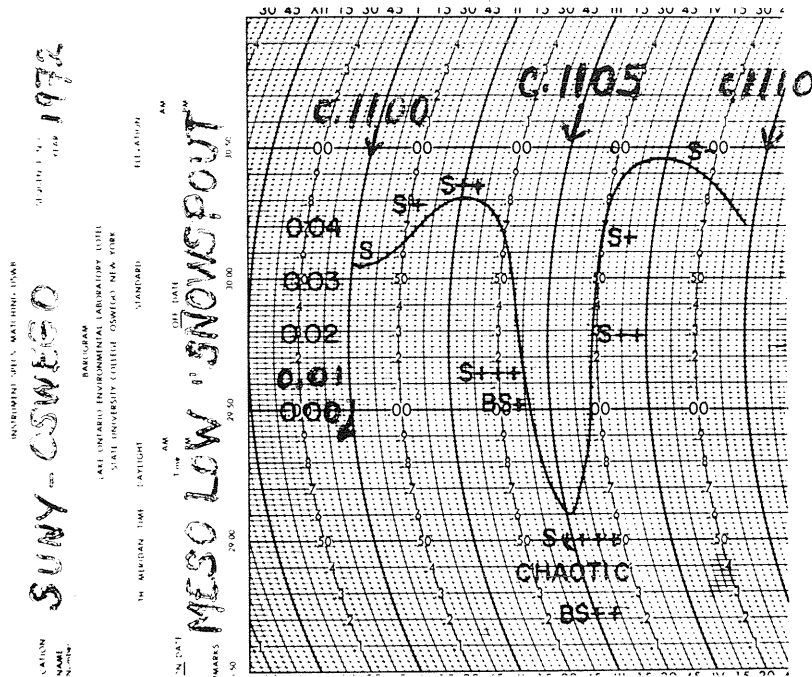


Figure 5. Enlargement of micro/meso low pressure feature from a microbarograph trace made at SUNY, College at Oswego near 1100, 5 February. Such features occur quite frequently near the center of an active snow band. They do not generally last long over land. Commonly, snow conditions vary greatly with passages, as suggested in photo. Relatively, visibility variations can spread from 830 m (0.5 mi.) to 30 m (near 0.02 mi.) or less in a few minutes. They were very evident on the 5th. (Sykes, et al., 1971, 1972).

connections remained good, though, so that the “outside world” came to know of our plight in Oswego. There were calls from news services. Walter Cronkite, of CBS News, was interrupted during his Friday evening newscast. He actually read a “live” report about the weathermen “snowed-in at their conference.” There was little change throughout the night and into Saturday morning, the 5th. From 0500 to about 1100 there was a sort of intermission in the action with intervals of wide variation in snowfalls. These intervals lasted from 10 to 15 minutes. Visibilities still ranged from near 0 to 150 m (500 ft). Falling snow never let up completely. That six-hour period was characterized by frequent and sudden changes. Later study indicated that the center of the band was apparently quite close, and that small (micro/meso) low pressure features were traveling from west to east through the band. An enlargement of one of these is shown in Figure 5. As each little system would pass, the conditions would go through a cycle of deterioration and improvement.

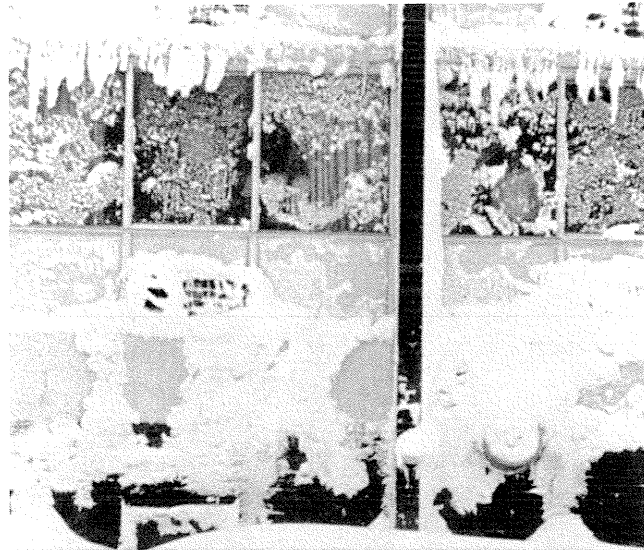
Near the end of this 6-hour period during relatively “good” conditions a photograph was taken

(Fig. 6) looking to the north along the east side of the Holiday Inn. Shortly after the picture was made blizzard-burst conditions returned with renewed fury. The period from 1100 through 1630 was the worst portion of the entire storm. Soon after 1630 the sky brightened, snow decreased within a few minutes so that visibility increased to 3 km (2 mi.) and the wind decreased. It was over! Figure 7 is a view of the inn, near the entrance but looking to the west. Some faces can be seen in the windows. While cars could not move immediately around the inn, street scenes from nearby locations are shown in Figures 8 and 9. More details about the story of the 1972 ESC at Oswego are contained in references (Sykes, 1972 a&b; and 1972, Dec.).

Some attendees left later on the 5th, but most of the remaining departed on Sunday, the 6th. Attendees were not the only storm casualties. The *Palladium Times*, Oswego’s newspaper, failed to print for the 3rd time in its 126-year history as of 1972. The prior occasions were 31 January and 1 February, both as a consequence of the Blizzard of ’66. Staff members of the paper and staff of the local radio station, WSGO, kept the “outside world” informed.



*Figure 6. Abandoned vehicle as seen in Oswego City at about 1510, 4 February during field trip to college area.*



*Figure 7. Near 1640 (corrected time) on 5 February after blizzard conditions ceased. View is toward the west at the front of the Holiday Inn. Note sticking snow as in Figure 2.*



*Figure 8. February 5, at about 1045 with view toward north along the side of Holiday Inn. Photo shows conditions just before the final burst of the ESC Blizzard that ended nearly 6 hours later. Farthest objects to north are 100 m (330 ft) distant. Compare with Figure 7.*





Figure 9. At 1655 on 5 February. View is along Bridge Street (N.Y. 104) near center of Oswego City; view toward west. Visibility in light snow is 3 km (2 mi.). Compare with Figure 6.

In two days and two hours some 135 cm (54.2 in.) of snowfall were reported (Sykes, 1972). Wetness at first, and then wind action during the squall and blizzard period made snow depth measurements difficult. The total depth reported is believed to be *very conservative* based upon the intense observational efforts carried on before the 12-day period as well as during this and subsequent snowfalls. Suffice to point out that for nearly 38 hours average snowflake sizes varied between 0.95 cm and 1.27 cm (0.37 in. and 0.5 in.). While only an estimate, a truer actual snowfall total for 38 hours might have exceeded 224 cm (90 in.) if measurements could have been made without wind-related factors.

## CONCLUSION

The 29th meeting members left Oswego to legend. A great deal of snow was all too evident at the time of the conference. Some unbelievers were held captive for up to two days. Yes, Gordon (Sykes, 1972a&b) that was quite a conference! For the 20th Anniversary meeting there was snow too. That snow was 2 to 3 miles overhead. No one complained.

## ACKNOWLEDGMENTS

During the study years for lake-effect snow situations, scores of people in Ontario Province and New York State (around Lake Ontario, the "Oswego Crescent") cooperated actively, e.g., observing; managing equipment; and communication and data handling. Scores of college students participated in various ways. Hundreds of school-district students from some 40 districts observed snow conditions. There was patience and understanding from family and friends. They endured through tens of thousands of hours working at several jobs, making dangerous and extensive field travels, performing detailed weather observing, etc. For so much help, including from the College at Oswego and the media, so much enthusiasm, and such genuine GOOD WILL, I extend many, many sincere and grateful thanks!

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