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[INSERT] 650703-77

Bowersock Dam, Kaw River, Lawrence, Douglas Co., Kansas

(Date of insertion July 3, 1965) June 24, 1965 (see July 4, 1965 p. 650621-75 for proper sequence

On this date the Kaw River was near flood stage and was the highest level attained since the flood of 1951. At this time the water was flowing smoothly over the dam and the difference in water level was approx. 5 feet lower on the downriver direction of the dam. As the water adjusted to the drop it created a water agitation similar to the white water below normal rapids or cascades in large rivers. Took several photographs to show the structural character of these waves and associated water interference.

Photo 650624-1 General character of agitated water below dam showing well formed first wave, several less well formed succeeding waves and lastly the zone of oscillating waves with minor crests forming in other directions to the main flow of the current.

Photo 650624-2. Primary or first wave. This wave has the general character of the ocean surf with upwelling of water, crest or cornice formation and overturned cornice plunging forward. This surf or wave differs from the oceanic type in that the water is moving downstream whereas in a surf the water is static.

Photo 650624-3. In reference to canoeing one cannot anticipate the stage of the first wave as it is rapidly changing every second. One must, however, understand the various stages of the wave development so that at impact one will anticipate the conditions under which the canoe will react to the wave.

Photo 650624-4 A close look at the primary wave showing various stages of crest formation. At right hand side of photo a cornice is forming; at extreme left the cornice has overturned forward; just left of center is an irregularity of surf formation which will dictate to type of cornice to form.

Photo 650624-5 a cornice of irregular slope & extent. This is a solid mass of water and is the most hazardous stage of wave formation as far as running the wave with a canoe. A canoe strikes a solid wall if run headon or is deflected if contacted on either side of cornice.

Photo 650624-6 A similar crest of solid water forming on advancing side of wave. An overturned wave has broken to right of cornice. A canoe is forced upward on