

author has plotted the cases of cross-wind right and left, and tailwind. The various wind conditions are summarized below.

ROUTE 1 — Straight ahead with 200 ft./min. lift.

ROUTE 2 — At angle of 35° from course with 300 ft./min. lift and then back to the course.

WIND	DISTANCE MADE IN 2:55.5 HOURS	
	Route 1	Route 2
10 mph headwind	94.7	97
10 mph tailwind	153	147
10 mph toward the deviation side	119	97
10 mph from deviation side	119	123

These rough calculations suggest that with a tailwind or a wind from the deviation side of the course, the allowable deviation angle is reduced.

Conversely a headwind or a cross-wind from the deviation side allows a larger deviation angle. The amount that the angle may be increased or reduced depends on the lift, wind direction and wind velocity. But a rough rule-of-thumb is that: The allowable deviation angle may be increased by the crab angle necessary to track over the allowable deviation vector in cases of *headwind* or *side-wind from* the deviation side, and the allowable deviation angle must be decreased by the same amount in case of *tailwind*, or *sidewind toward* the deviation side.

DISCUSSION

The foregoing calculations show that deviations from course may be necessary for maximum speed over a course, and that the deviation angles are generally larger than one might think, off-hand. Because of the guesswork (or knowledge and skill) involved in judging the strengths of lift in the first place, the foregoing calculations may be somewhat trivial. Even so, consideration of something trivial can make the difference sometimes, in a soaring contest or a badge attempt.

It might be handy for a pilot to carry a graph of maximum allowable deviation angles, (such as Figure 3) in his sailplane to refer to in flight. The application of numbers has never eliminated pilot judgement and the pilot's evaluation of the situation which keeps soaring an art and therefore enjoyable as a sport.



Pete Bowers flying his replica of the 1911 Wright Model EX as a glider on auto tow.

REPLICA AIRPLANE TESTED AS GLIDER

The latest flight testing techniques are being applied to a full-scale replica of the 1911 Wright Model EX, the first airplane to fly across the United States. September-November, 1911.

The technique used for testing such a supersonic craft as the X-15 is to fly it "light" as a glider by leaving out the powerplant and heavy fuel load. The unpowered craft is carried aloft under a B-52 and released into gliding flight. What is good enough for the supersonic is also good enough for the super-sub-sonic, and Peter M. Bowers of Seattle is applying his experience as a glider pilot to testing the 1911 Wright replica in the same way. However, instead of a B-52, he uses the more traditional tow car and 150 feet of nylon rope. For the first flight, aided by a 15 mph wind, the airplane-cum-glider was towed down the main runway of Seattle's Boeing Field. Tow car speed was only 20 mph, so three

full minutes of flight time were obtained while traversing only half of the 10,000 foot runway. A second flight duplicated the procedure.

In appearance, the replica is true to the original in that it is uncolored. Only clear dope is used on the dacton-covered wings, allowing the structure to show through just as it did in the old days. Since the replica was built specifically to commemorate the fiftieth anniversary of the 1911 flight, the FAA issued the special registration number of N-1911 to it.

Winter weather permitting, the commemorative flight will start from Brooklyn, New York, and end in Pasadena, California. The original took 82 flying hours spread over nearly two months. The replica is expected to take more flying time because of the need to conform to airport traffic patterns, detour around populated areas, and other restrictions imposed by modern regulations that didn't exist for the original or for Calbraith P. Rogers, its pilot.

Another Briegleb BG-12A sailplane hatches, this one constructed from a kit by Hugh Damron of Manhattan Beach, Calif. The photo was taken at El Mirage Field, Adelanto, Calif., home of the BG-12's, during preparations for the first flight late in November.

Photo by George Uveges

