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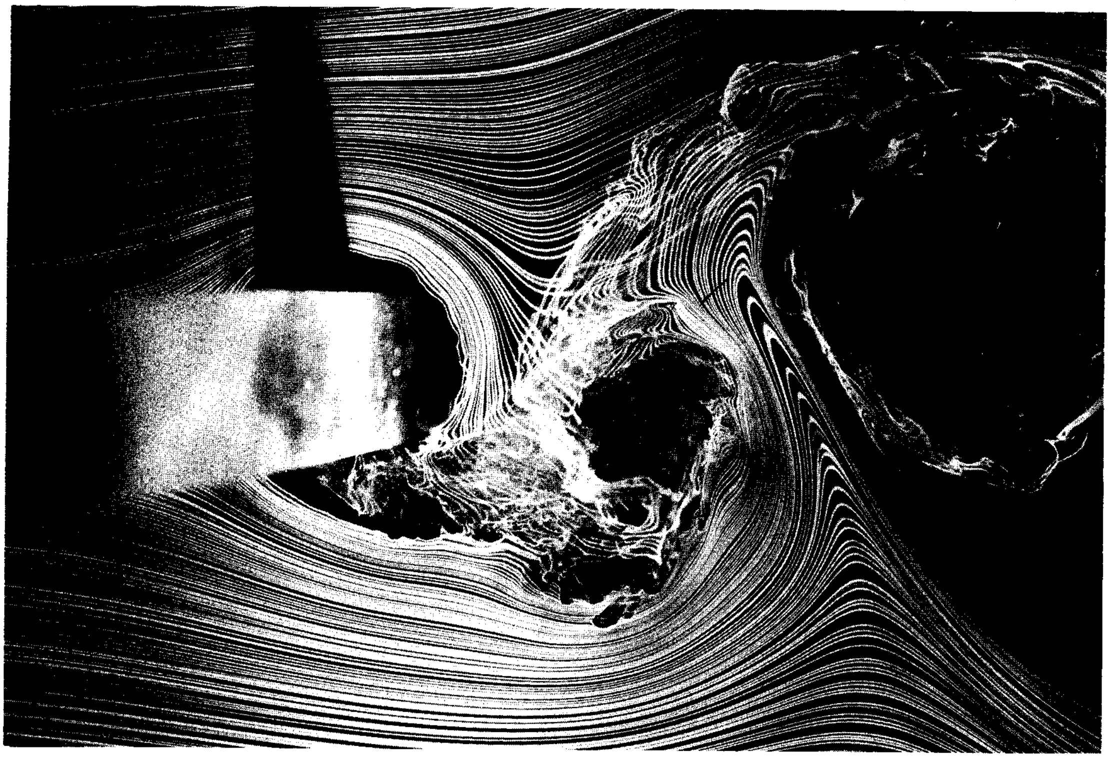

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The photograph shows a snap-shot of the cross flow around a rectangular cylinder. The streaklines were made visible by using the smoke-wire method in a wind tunnel. The ratio between the side aligned with the flow and the side normal to the flow is H/D=0.62. The Reynolds number (based on D) is 8000 and the free stream turbulence intensity is 0.06%. The photograph reveals that the turbulent vortex shedding flow at this parameter combination is extremely powerful. The Strouhal number is 0.13 (aspect ratio L/D=32, blockage 2.5%). Experimental data at Reynolds numbers of the order 10000 show that the drag coefficient reaches a local maximum of about 2.8-3.0 at around this "Golden Section" side ratio [C.Norberg, J. Wind Eng. and Industrial Aerodynamics, 1993 (to appear)]. However, the critical side ratio is reduced by the addition of small-scale free stream turbulence as well as by transverse vibration especially at resonant conditions [Y.Nakamura, K.Hirata, J. Fluid Mechanics, Vol. 208, pp. 375-393, 1989]. With an increase in H/D (at constant D) and for a given Reynolds number in the turbulent regime the vortex formation moves upstream towards the cylinder, the cavity shrinks and consequently the base pressure decreases. Probably, the associated increase in vortex strength is accelerated due to e.g. progressive interactions between the two shear layers as well as by an increased importance of shear layer/edge interactions. At the critical side ratio the size of the base cavity has been reduced to a minimum. Indeed, the photograph shows that the shear layer springing from the upper left corner of the cylinder, at that particular instant, is tightly wrapped around the section and confronts, at the diagonal corner, with the shear layer from the other side. Beyond the critical ratio the interactions between the shear layers and the rear corners forces the vortices to again develop further downstream with the result of an increase in base pressure i.e. a decrease in drag.