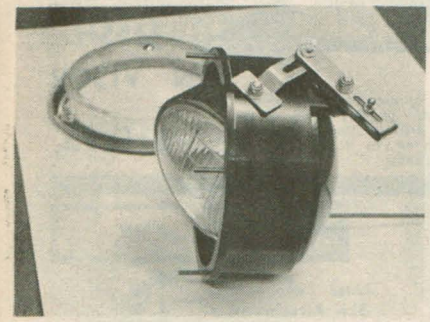
# you can see around corners


***Peek-a-boo lights are great help at night reports David Scott***

*CONTROL lever on dash dips lights 10 deg.—a great help on crests at night.*



*SECRETS of Rotadipper exposed. Several U.K. makers have shown interest.*

*MINI lights pictured here pivot 42 deg. on full lock—enough for most corners.*

WANT headlamps that steer around corners, hold the beams on the centre white line or cat's-eyes on a tight bend, don't glare across the road at approaching drivers on turns, and can be aimed down with a finger-tip lever in the cockpit to place the light just where you want it?

These "Rotadippers" were designed by Pat Martin, an English car dealer, and are now being made in Britain as conversion kits, selling in the U.K. for about £25 Stg.

The basic idea is simple yet ingenious. A B.M.C. Mini was Martin's guinea pig. He replaced its normal 7-inch headlamps with bolt-on plastic shells housing standard 5¾-inch units. These are clamped in stainless steel rings with swivel pins at top and bottom, and the assemblies are enclosed by clear domes.

## Aiming

Sideways aiming of each light is controlled by a compound lever linked to the appropriate steering track rod through a swinging lever and slender rotating shaft.

The lights not only swing from side to side with the steering wheel. They anticipate the turn, swivelling faster than the road wheels when you begin steering into a bend. They shine around the corner before you get there so you can see where you're going, then slacken their angular movement as the car follows.

But there's more. As the units swivel to one side they also tilt down progressively, automatically lowering the beams as the steering angle increases for close-in illumination of the curbs and shoulders in the inside.

In effect, they swing through an arc in both horizontal and vertical planes.

These geometric antics come from a clever arrangement of levers and cams on the underside of each plastic housing. The first of two levers, positioned by the rotating shaft, has a fixed pivot. A peg on its outer end slides in a slot in the second lever, which is bolted to the lower swivel pin on the light's clamping ring.

As the first lever moves with the steered wheels, it imparts a differential cam action against the second. The slotted lever swings rapidly at the start of a turn, because the peg is then at the inner end of the slot and therefore close to the fulcrum.

The rate of swing of the light slows as the angle increases, for the peg now slides out towards the end of the slot, effectively lengthening the lever arm. On the Mini it turns to 42 degrees at full lock.

Downward tilting is crafty too. The lower swivel pin locates in a longitudinal slot in the plastic housing. Its operating lever is T-shaped. When this is swung to either side, one of the outer corners of the "T" wipes against the housing flange, levering the bottom of the light back against a spring.

If that isn't enough, you can also tilt the units by hand through a 10-degree angle, varying the beam between horizontal and a pool of brilliance right under your nose. This lets you depress the beams before crossing a hump-back bridge, illuminate a tricky driveway, avoid mirror-dazzle in the car ahead, or correct tail-loading.

How's it done? The upper swivel of each headlamp is supported by a metal slide seating in a T-slot moulded into the top of the housing. Sheathed cables connect the two slides to a cranked lever on the dash just under the steering wheel.

Capping it all, the horizontal aiming is fail-safe. If anything breaks in the linkage the lights are spring-loaded to self-centre straight ahead.

I drove Pat Martin's Mini around the wooded suburbs south of London and found it uncanny. At the first twitch of the wheel before a bend the lights scanned across the road, pointing the way ahead. There was no peering into blackness, with the beams shining uselessly on trees on the other side.

On a small rural traffic circle the lights tracked perfectly along the inside curb as I nipped around briskly. With blind spots eliminated I felt happy racing along twisty country lanes.

So far Martin has produced kits for the B.M.C. Mini, 1100, 1800, Ford Cortina and Anglia.

Want more information? Write Pat Martin at Martin Vaughan Ltd., 5-7 Ravenbourne Rd., Bromley, Kent, U.K.