

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: B60R 11/02	A1	(11) International Publication Number: WO 98/42536 (43) International Publication Date: 1 October 1998 (01.10.98)
(21) International Application Number: PCT/GB98/00835 (22) International Filing Date: 19 March 1998 (19.03.98) (30) Priority Data: 9705979.4 ✓ 22 March 1997 (22.03.97) ✓ GB (71) Applicant (for all designated States except US): NEW TRANSDUCERS LIMITED [GB/GB]; Stonehill, Huntingdon, Cambridgeshire PE18 6ED (GB). <i>add changed PF 23</i> (72) Inventors; and (75) Inventors/Applicants (for US only): AZIMA, Henry [CA/GB]; 3 Southcare Close, Chaucer Road, Cambridge CB2 2TT (GB). COLLOMS, Martin [GB/GB]; 22 Burgess Hill, London NW2 2DA (GB). ELLIS, Christian [GB/GB]; Briar Cottage, 3 Barley Road, Great Chishill, Hertfordshire SG8 8SB (GB). (74) Agent: MAGUIRE BOSS; 5 Crown Street, St. Ives, Cambridgeshire PE17 4EB (GB).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, <u>SG</u> , SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: PASSENGER VEHICLES INCORPORATING LOUDSPEAKERS COMPRISING PANEL-FORM ACOUSTIC RADIATING ELEMENTS		
(57) Abstract A vehicle (15) having a passenger compartment having a moulded headlining (1) and a loudspeaker (5) in the passenger compartment, characterised by a panel-form loudspeaker (5) having a member having capability to sustain and propagate input vibrational energy by bending waves in at least one operative area extending transversely of thickness to have resonant mode vibration components distributed over said at least one area and having predetermined preferential locations or sites within said area for vibration exciter means and having a vibration exciter mounted on said member at at least one of said locations or sites to vibrate the member to cause it to resonate forming an acoustic radiator which provides an acoustic output when resonating and which radiator is attached to or integral with the headlining. From another aspect the invention is a vehicle component in the form of a moulded lining member (14) for a passenger compartment, e.g. a head or door lining or the like, characterised by a panel-form loudspeaker (12) in the form of an acoustic radiator as defined above. 		