Theses Formulated by the Workshop of “Air-borne Noise”

1. The combined effects of noise at night caused by the various modes of transport require continued investigation. First results from laboratory studies are, if possible at all, to be supplemented by field studies. This also applies to daytime.

2. According to current knowledge, the waking-up reactions when exposed to equal maximum levels of flight noise as compared to road or rail-borne noise are less intensive, flight noise events, however, are presumed to be memorable events for their usually longer duration.

3. Due to the results available so far, a review of the rail bonus, at least at night, suggests itself.

4. Country-wide airport planning in Germany, as is the case in Switzerland, is important and desirable.

5. The legal fundamentals for such an airport concept still need to be established. This also applies to their subsequent implementation processes.

6. The coming into effect of the Noise Protection Act provides legal certainty to the largest extent. Individual issues of its implementation, particularly in its sub-legal regulation, are still open to discussion and need to be clarified.

7. The treatment of night flight noise is still, as it has always been, a central issue in jurisdiction. The various interests of the parties involved need to be balanced fairly in the light of legal requirements.

8. The registration and processing of complaints for the preparation of hearings and decision-making is compulsory.

Theses Formulated by the Workshop of "Rail-borne Noise"

1. By announcing its strategy of the "Greening Transport Package" in summer 2008, the European Commission published its focal points regarding railway noise abatement: By retrofitting the existing cargo carriage rolling stock with low-noise technology, it will encounter rail-borne noise at its source.

2. Successful implementation of the "Greening Transport Package" requires practically proven technical solutions at competitive costs. In order to accelerate the intended retrofitting process, the Commission will introduce incentive systems, such as noise-related rail-line usage fees. Studies show, however, that their introduction may turn out to be very complex and costly. Direct support of such retrofitting would be preferred.
   Altogether, the retrofitting process is to be harmonized on a European level and jointly designed in such a way that the competitiveness of railroad cargo transports as compared to other modes of transport is maintained.

3. Politics and industry are yet required to solve a number of problems regarding the creation of effective incentive systems as well as the technical development of low-noise brake systems in order to achieve the desired noise-reduction targets.

4. The effective implementation of the strategic goals requires a complex of technical measures with view of the wheel-rail system. Thereby, it is also important to cover the entire European rolling stock for passenger and cargo transport of both state-run railways and private operators by this noise rehabilitation effort. For this purpose, the much differentiated framework conditions in the various member countries need to be taken into account.

5. It is the goal of Deutsche Bahn to halve rail-borne noise by 2020. Crucial steps on this way are the purchase or retrofitting of cargo carriages with composite rail brackets as well as the noise-rehabilitation program along federal railway lines. For the promotion of this program, the federal government makes € 100 million available annually, which is implemented in Deutsche Bahn's programs.

6. Within the framework of the Economic Recovery Package II, further, completely new and innovative noise protection measures are investigated with view of technical measures to avoid rail-borne noise already in the immediate proximity of the track and to attenuate annoying droning from bridges. For this purpose, the federal government provides another € 100 million in the years 2009 – 2011. The retrofitting of cargo carriages with composite brackets is state-subsidized within the framework of a pilot project with € 40 million.

7. New and innovative noise abatement measures can only become fully effective if they are legally adopted without delay in the practical approval procedure. Politics, facility operators and transport corporations are jointly requested to determine ways of how to accelerate such processes.

8. There is a series of promising innovations under way. Selected solutions have been presented to the workshop of “Rail-borne Noise” and jointly discussed. Regarding the topic of vibrations, it appeared that mass-spring systems, which are very promising for approaching the vibration issue, are available on the market.
9. Noise reduction remains to be a challenging task for railways. But the solutions elaborated by politics and industry during the past few years raise confidence that the noise issue will have been solved by the end of the next decade.

Theses Formulated by the Workshop of "Road-borne Noise"

1. When roads are newly constructed or substantially changed, acceptance measuring should be performed regarding emission from the road surface by means of the CPX measuring method (measuring trailer) possibly in combination with individual SPB measurements (statistical passing-by).

2. With view of the probably required rehabilitation of a road, it should be subjected to a complex assessment of its noise-relevant road surface properties.

3. Within built-up areas, SPB measurements are not feasible in most cases, due to the limited conditions of road margins. CPX measuring is to be applied in such cases.

4. Statutory regulation is required for noise rehabilitation including the definition of rehabilitation limit values that should range clearly below the limits applied today.

5. In-situ measurements (the Adrienne Procedure) at a noise barrier acc. to DIN CEN/TS 1793-5 have yielded values that were approx. 50% below those determined by reverberation chamber measurements acc. to DIN EN 1793-1. This effect is to be investigated systematically. If necessary, regulations need to be adapted.

6. The pre-standard DIN CEN/TS 1793-4 in its current version is not suited for the assessment of any improvement of a shielding effect and the comparison of various add-ons on top. The introduction of a "measure of improvement" as a measuring method without raising the referential height is a possible approach towards solving the issue of the comparability of add-ons on top.

   However, the result of this test procedure reveals nothing regarding the distant-field effect of noise barrier add-ons.

7. Since a uniform European calculation method for calculating road-borne noise (HARMONOISE, IMAGINE) can currently not be expected, the new version of RLS-90 shall be speeded up.

8. Acc. to Directive 20/49/EG (Environmental Noise Directive), the dose-effect relationship for assessing the effects of noise on the population should be drawn on. Studies available so far show highly different results. This can only be remedied by a study that has been set up based on uniform scales and, if possible, prepared across Europe.

9. In the future, the implementation of generally emission-limited and source-oriented measures needs to be accelerated, e.g. promotion of lower-noise tires, promotion of low-noise road surfaces.

10. If ventilation is to be included in "window solutions", the multiple uses of noise protection/ heat and air exchange are to be benefited from.