
**LEMA 60TH ANNIVERSARY CELEBRATIONS
TOKYO / JAPAN – 5 NOVEMBER 2008**

1 Opening remarks

Among the national IC Engine Manufacturers Associations which have gathered here today at this historic place, the Land Engine Manufacturers Association - LEMA is one of the eldest of our sister trade associations: The US Engine Manufacturers Association - EMA has recently celebrated its 40th anniversary, CICEIA celebrated 100 years of engine production in China whereas the European Association of Internal Combustion Engine Manufacturers – EUROMOT is comparatively young having been in existence for 17 years only. A 60th Anniversary is significant, and I want to take this opportunity to thank the Land Engine Manufacturers Association for inviting Euromot not only to attend this historic occasion, but also to speak to this distinguished audience.

Furthermore, I would like to thank the Land Engine Manufacturers Association for your excellent cooperation in all matters related to the harmonisation of regulations affecting internal combustion engines worldwide. Engine and equipment trade associations have an important role to play when it comes to convince government regulators in Japan, in the United States of America, in China or in Europe to join in a legislative dialogue and to form international alliances. The exemplary cooperation and relentless efforts of LEMA, EMA, CICEIA and EUROMOT in lobbying the requirements of advanced IC engine technology and the economic needs of enterprises selling into global markets towards government regulators has resulted, rather than compromising air quality, in more effective air quality programmes, and more recently, in first common steps towards joint climate change programmes. Let me express my warmest thanks to all of you for having contributed to this outstanding achievement.

2 Harmonised legislation and standards – a key for accessing global markets in the modern economy

Harmonised legislation and standards are essential for accessing global markets in the modern economy. In Europe the European Commission's Directorate for Enterprise and Industry is determined to implement the so-called "Lisbon Strategy for Growth and Jobs" and to fully integrate the international aspects of policies and regulations into their reflections. Their ultimate aim is the strengthening of EU enterprises' competitiveness, and one essential means for reaching this goal is to progressively open foreign markets and secure sustainable access to them.

As a counterpart, access for foreign countries' business operators to the EU market has to be open, secure and fair, stimulating EU operators' response, forcing them to become more efficient and competitive and helping them to confront the challenges of globalisation. In this context international regulatory cooperation - especially in the sense of regulatory reform and simplification - has more recently gained importance over other issues. Solid frameworks for such periodical dialogues exist with the USA and Canada, Japan and China. With the latter two, the European Commission is in additional dialogue on the level of corresponding industry departments focusing on industrial policy.

Irrespective of philosophical questions on the "best" or "most environmentally compatible" way to regulate our products on the European and International level, it is vital for every market participant who aims at successfully accessing foreign markets to know as early as possible as much as available about the legal framework of the export market and about future trends of product-related rulemaking. Whereas in Europe and Northamerica abundant information is publicly available, other markets lack this transparency. In such an environment, reliable and trustful business networks between the market participants have a significant effect on the strategic success of the economic operations. In this context, I would like to express appreciation to the commitment of our contact persons in the Land Engine Manufacturers Association.

3 Nonroad mobile machinery emissions legislation in Europe

The European legislation for land engines is closely aligned with the US EPA standards. The implementation of US EPA Tier 4 and EU NRMM Stage IIIB regulations will make a vast contribution to improving air quality. Compared with current levels, PM will be reduced by up to 90% at EU Stage IIIB, with NOx being cut by 90% by EU Stage IV. This huge reduction is only achievable through advanced engine technology and exhaust aftertreatment, which is likely to

drive increased complexity and cost into installations. It will be a major technical challenge to engine and equipment manufacturers. Specifically with regard to the question on how to allocate their product development resources and manpower to numerous niche markets, i.e. highly diversified applications with low sales volumes in truly global markets. In this context Euromot had asked the independent engineering company AVL to carry out a study on successful concepts for NRMM equipment to meet upcoming legislation. The results of this study strongly underline the specific constraints for NRMM applications compared to onroad technology and clearly state that a simple transfer from onroad to nonroad applications is not possible. The technologies have to be adapted to meet nonroad conditions: The components do not only need to withstand extremely high stress but also dirty and dusty environment. Furthermore, it is necessary to develop new packaging concepts for the engine, engine cooling and exhaust aftertreatment systems. A phase-in of new legislation and a step-by-step introduction of new technologies will help to develop low-emission and highly efficient engines with respect to fuel consumption, durability and costs.

As regards CO₂, carbon dioxide emissions are related to the amount of fuel consumed and its carbon content. Nonroad engines generate only 1-2 % of tailpipe greenhouse gas emissions and are not yet regulated, but improving fuel efficiency needs to be a key driver in minimising CO₂ emissions and reducing operating costs. Biofuels provides emissions advantage with reduced PM, HC, CO and CO₂. It is therefore important that fuel specifications are developed that will be compatible with EU Stage IIIB engines and aftertreatment systems.

Major revision processes of emission regulations for nonroad mobile machinery sources are currently proceeding in the EU. The Technical Review of the EU Nonroad Mobile Machinery Directive (97/68/EC as amended by 2004/26/EC) is aiming at both a reassessment of the technical feasibility of existing Stage IIIB and IV regulations and an evaluation of the need for further or new regulations in some of the pre-stage IIIB applications. Potential requirements for in-use compliance procedures and off-cycle emission provisions are also included. Currently the European Commission is about to identify areas of potential new or revised NRMM rulemaking and is requested to provide a report on its findings by the end of 2008. Euromot is strongly committed to contribute to the overall revision process by providing industry experience and specific experts' knowledge to ensure the paths forward are both environmentally friendly and technically and economically feasible.

Closely related to the review of the NRMM Directive is the revision of the EU Fuel Quality Directive (1998/70/EC). Currently sulphur levels of up to 1000 ppm are being distributed for Stage II and Stage IIIA applications in the EU. However, the phase-in of engine technology complying with Stage IIIB from 31 December 2010 will not only require significantly lower sulphur levels but also

alignment with onroad fuel parameters, in particular lubricity, cetane number, viscosity and polyaromatic hydrocarbon content as specified by the European standard EN590.

In January 2007, the European Commission published a proposal to amend the Fuel Quality Directive. Among other things, this proposal recommends to introduce 10 ppm ultra-low sulphur fuel for all land based nonroad mobile machinery by 31 December 2009. Assuming an implementation of the proposal in Europe, the global sulphur level scenario for NRMM fuel in 2010 could be anticipated with levels of up to 15 ppm in the EU, US, Australia and Japan, of up to 500 ppm in India and China and above 500 ppm in the rest of the world. However, it is not clear whether the European Parliament and Council will finalise the codecision procedure by the end of this year or before the European elections in June 2009 at the latest only thus enabling the mandatory and harmonised introduction of ultra-low sulphur fuel in Europe as from 1 January 2010. Any delay in this date will have potentially severe consequences for stage IIIB compliant engines.

4 Conclusions

- The coming into force of EU Stages IIIB and IV for nonroad mobile machinery engines will once again significantly reduce exhaust gas emissions by means of advanced engine and aftertreatment technology.
- The technologies helping to meet EU Stage IV emission legislation are generally available. All these technologies have already been introduced, and their combinations will be introduced in production in onroad applications soon. However, a simple transfer from onroad to nonroad applications is not possible. The technologies have to be adapted to meet nonroad conditions.
- Special solutions are not only required in view of the costs but also due to boundary conditions specific to nonroad applications. Main drivers are the large number of different machines in different markets and comparable low production volumes. Standardization is required to minimize the commercial impact not only on the industry but also on the final customer.
- A phase-in of new legislation and a step-by-step introduction of new technologies will help to develop low-emission and high fuel economy engines with respect to durability and costs. It will also help smaller manufacturers, especially those which do not have access to onroad experience. Last but not least, the final customer and the user will have to accept the complexity of the engines and also maintain the machine properly so that the investment in new engines is cost effective.

- The nonroad fuel quality has to be compatible with emissions standards and fuel supply to be provided in due time.
- International alignment of legislation is and will be essential for the global nonroad industry to allow for “one product for the global market”. No need to say that the European manufacturers would highly welcome the closest possible alignment of legislation between the EU and Japan, especially with regard to engine certification and testing.

Thank you, again, for the opportunity to speak to this distinguished group on this historic occasion. On behalf of the European Association of Internal Combustion Engine Manufacturers, let me again offer my congratulations to the Land Engine Manufacturers Association on the occasion of your 60th Anniversary.