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World Forum for Harmonization of Vehicle Regulations (WP.29)

Working Party on Pollution and Energy (GRPE)

REPORT OF THE WORKING PARTY ON POLLUTION AND ENERGY (GRPE)
ON ITS FORTY FIRST SESSION
(16 - 19 January 2001)

ATTENDANCE

1. GRPE held its forty-first session ^{1/} from 16 to 19 January, 2001, under the chairmanship of Mr. B. Gauvin (France). Experts from the following countries participated in the work following Rule 1(a) of the Rules of Procedure of WP.29 (TRANS/WP.29/690): Belgium; Czech Republic; Denmark; Finland; France; Germany; Hungary; Italy; Japan; Netherlands; Norway; Poland; Russian Federation; Spain; Switzerland; United Kingdom; United States of America. Experts from the European Commission (EC) and a representative of the World Health Organization (WHO) also participated. A representative of the Republic of South Africa took part in the session under Rule 1(b) of the Rules of Procedure of WP.29 (TRANS/WP.29/690). Experts from the following non-governmental organizations also participated: International Organization for Standardisation (ISO); International Touring Alliance /International Automobile Federation (AIT/FIA); International Organization of Motor Vehicle Manufacturers (OICA); International Motorcycle Manufacturers Association (IMMA); European Association of Automotive Suppliers (CLEPA); Automobile Emissions Control by Catalysts (AECC/CEFIC); European LPG Association (AEGPL); European Association of Internal Combustion Engine Manufacturers (EUROMOT); The Oil Companies' European Organization for Environment, Health and Safety (CONCAWE); European Committee of Associations of Manufacturers of Agricultural Machinery (CEMA); European Natural Gas Vehicle Association (ENGVA). An expert from the Committee for European Construction Equipment (CECE) participated at the invitation of the secretariat.

^{1/} Following the decisions taken by GRPE at its fortieth session (TRANS/WP.29/GRPE/40, para. 82.), which was endorsed by WP.29 (TRANS/WP.29/735, para. 72. and 73.), two informal meetings were held prior to the forty-first GRPE session proper.

2. The second informal meeting of the GRPE working group on the world-wide motorcycle emission test cycle (WMTC) was held on 16 January 2001 (morning and afternoon), under the chairmanship of Mr. Havenith (Netherlands). Experts from the following countries and organizations participated in the work: Belgium, Czech Republic; Germany; Hungary; Japan; Netherlands; Norway; Poland; Republic of South Africa; Russian Federation; Spain; Switzerland; United Kingdom; United States of America; European Community (EC); International Organization for Standardization (ISO); International Touring Alliance /International Automobile Federation (AIT/FIA); International Organization of Motor Vehicle Manufacturers (OICA); International Motorcycle Manufacturers Association (IMMA); European Association of Automotive Suppliers (CLEPA); Automobile Emissions Control by Catalysts (AECC/CEFIC); A summary of the proceedings of this informal meeting is given below (paras.59 to 64).

3. The tenth informal meeting of the GRPE working group on the world-wide heavy-duty certification procedure (WHDC group) was held on 17 January 2001 (morning only), under the chairmanship of Mr. C. Havenith (Netherlands). Experts from the following countries and organizations participated in the work: Belgium; Czech Republic; Denmark; Finland; France; Germany; Hungary; Italy; Japan; Netherlands; Norway; Poland; Republic of South Africa; Russian Federation; Spain; Switzerland; United Kingdom; United States of America; European Community (EC); International Organization for Standardization (ISO); International Touring Alliance /International Automobile Federation (AIT/FIA); International Organization of Motor Vehicle Manufacturers (OICA); European Association of Automotive Suppliers (CLEPA); European Association of Internal Combustion Engine Manufactures (EUROMOT); The Oil Companies' European Organization for Environment, Health and Safety (CONCAWE); Automobile Emissions Control by Catalysts (AECC/CEFIC); European LPG Association (AEGPL); Committee for European Construction Equipment (CECE). A summary of the proceedings of this informal meeting is given below (paras. 4 to 10.).

REGULATION No. 49 (Emissions of C.I., NG and P.I. (LPG) engines)

Development of the emission testing procedure

Documentation: Informal documents Nos. 1 and 3 of annex 1 to this report.

4. The Chairman of the WHDC group reported orally on the progress that the group made during its tenth meeting held on 17 January 2001, prior to the forty-first session of GRPE. He informed GRPE that the minutes of the ninth WHDC meeting (Geneva, 23 May 2000) had been approved during the meeting.

5. He introduced the Executive Summary Report (informal document No. 1 - to be published as TRANS/WP.29/GRPE/2001/2) of a research carried out by TÜV (Germany) and TNO (Netherlands). This research identified a world transient cycle, which represents real-life heavy-duty vehicle engine operation. The results of validation (step 1) tests will be presented during the next GRPE session in May.

6. GRPE Chairman asked the experts from the United States of America, the European Community and Japan for their opinion of the report and their views regarding the work in the future. The expert from the United States of America thanked TÜV and TNO for their work. She was surprised, however, to hear that the work was planned to be concluded in May 2002 by proposing an ECE draft Regulation and said that her country would prefer to work in the framework of the 1998 Global Agreement. The expert from Japan supported the view expressed by the expert from the United States of America. The expert from the EC thanked all the participants and the Chairman for the work done in the WHDC group. He

also expressed the opinion that the WHDC group should target the 1998 Global Agreement.

7. The GRPE Chairman agreed to bring the concerns of the experts from the United States of America, Japan and the EC to the attention of WP.29 and ask for specific instructions on how to proceed with further work of the WHDC working group. He promised to report to GRPE during the next session, in May 2001 and propose a way forward.

8. The expert from OICA presented an interim report of the WHDC ISO sub-group (informal document No. 3). He indicated that validation tests were in progress and reported that besides positive correlation, difficulties had been encountered in some measurements. He envisaged that a further progress report should be ready for the forty-second session of GRPE in May 2001 and envisaged that by that time the group would be able to identify the reasons for some measurement discrepancies. Referring to the concrete results, the expert from OICA informed GRPE that standard ISO 16183 concerning measurement procedure had been balloted in ISO and was expected to be adopted by June 2001 and that standard ISO 16185 defining engine family concept had been published.

9. Concluding his report, the Chairman of the WHDC working group thanked Mr. Rodt (Germany) and Mr. Akai (JARI-Japan) for their contributions to the work of the working group. He acknowledged the comments received during his oral report to GRPE and envisaged that WHDC would succeed in harmonising the heavy-duty engine emission test.

10. GRPE noted the progress report of the WHDC group and appreciated the results achieved. It agreed to continue its consideration of the subject at the next session, taking account of guidance expected to be given by WP.29 (see para. 7 above).

REGULATION NO. 83 (Emissions of M1 and N1 categories of vehicles)

Documentation: TRANS/WP.29/GRPE/2000/10/Rev.1.

11. The proposal to introduce in the Regulation provisions for regenerative anti-pollution devices (TRANS/WP.29/GRPE/2000/10/Rev.1) was presented by the expert from France, who acknowledged that it had resulted from the work of an ad-hoc group (France, Germany, Switzerland, OICA and AECC) under the French chairmanship.

12. The expert from Poland considered the description of test procedure in the proposal not sufficiently clear. He was concerned that there might be large differences in test results between laboratories. The expert from France defended the proposal and explained that with some experience gained the procedure might improve.

13. GRPE considered the situation and agreed that the test for periodically regenerating systems proposed in document TRANS/WP.29/GRPE/2000/10/Rev.1 was the interim solution. It was noted that vehicles with catalytic converters and other particulate matter (PM) trap systems demonstrate an advantage in environment protection and any type approval procedure allowing their use would be appreciated.

14. The expert from Germany requested that paragraph 1.2. in annex 13 (this paragraph was in square brackets) was removed. This paragraph was giving the manufacturers and the testing laboratories too much latitude, which could lead to the utilization of inappropriate and inadequate test protocols.

15. GRPE agreed that the text of paragraph 1.2. in annex 13 should be removed. Furthermore, GRPE agreed that if the provisions of Annex 13 should prove to be not applicable to certain type of catalytic converters or other PM trap systems, the problem should be examined by GRPE on an emergency basis, to consider and approve an alternative test procedure proposed by the manufacturer.

16. The expert from CONCAWE was concerned that according to paragraph 3.2. in annex 4, the sulphur content of test/reference fuel has to be negotiated between the manufacturer and the testing laboratory prior to test. The expert from France explained that there were no minimum values for sulphur content specified for the test/reference fuel. The negotiations, therefore, would only regard the minimum sulphur levels.

17. The expert from the EC questioned the requirements for the engine bench testing proposed in TRANS/WP.29/GRPE/2000/10/Rev.1 while presently the chassis dynamometer test was required in Regulation No. 83. In response, the expert for Germany explained that this decision of allowing an alternative bench test was dictated by convenience, since it was more efficient to test the engine on the test bench than the whole vehicle on the chassis dynamometer.

18. After suggestion by the expert from Germany, the footnote 2 indicator in the table in annex 2 para. 16.1. was moved to the third line of the table.

19. The expert from the United Kingdom proposed few semantic and grammatical corrections to the document. Upon the suggestion of the GRPE Chairman, the final draft was corrected for proper English wording and the corrections were transmitted to the secretariat.

20. GRPE adopted document TRANS/WP.29/GRPE/2000/10/Rev.1 as amended (see paras. 15., 18 and 19. above) and requested the secretariat to submit it to WP.29 and AC.1 at its sessions of June 2001 for consideration as a proposal for draft Supplement 2 to the 05 series of amendments to Regulation No. 83. GRPE recommended that, whenever necessary, this technical procedure be used immediately, before the adoption of the formal amendments to Regulation No. 83.

REGULATION No. 110 (Specific components for CNG)

Documentation: Informal document No. 4 of annex 1 to this report.

21. The expert from Italy presented a proposal (informal document No. 4) to amend certain provisions of Regulation No. 110, which apparently were applicable to LPG and not to CNG fuel systems. He urged the experts that this amendment should be accepted and passed as soon as possible to WP.29 and AC.1 for approval and vote. He stated that the issue was critical for the ongoing type approval process and was also critical for safety. Besides, the expert from Italy indicated that there was a translation error in paragraph 17.6.1. of the French text of regulation No. 110, where the proper expression was "sans soudure" (seamless) not "acier inoxydable" (stainless).

22. GRPE considered the proposal and questioned the differences in the order of magnitude with respect to the values originally agreed for Regulation No. 110 (annex 4A, paras. 5.5. and 5.6.).

23. To avoid a hasty decision, the Chairman invited the experts from France, Italy and ENGVA to meet outside the meeting room and give their opinion to GRPE. Although these experts concluded that the values proposed by Italy were in order, the expert from France suggested that the maximum flow allowed

through the by-pass should be lowered from 0.13 m³/min to the original value of 0.05 m³/min. This was rejected by Italy.

24. The expert from the United Kingdom acknowledged that, although the amendment was important, he was not ready to agree to it without consultation with the experts in his country.

25. Noting the difficulties, GRPE invited the secretariat to distribute informal document No. 4 with an official symbol for the June meeting of WP.29. The document should also include the correction mentioned in paragraph 23. above. During the May meeting GRPE should make its final decision concerning the document, especially with regard to the exact values of the maximum flow through the bypass.

26. GRPE agreed to resume consideration of this subject at its next session.

Note by the secretariat: After the session Depository Notification C.N.1379.2000.TREATIES-5 of 4 January 2001 was received, confirming the entry into force of Regulation No. 110 on 28 December 2000 for all Contracting Parties to the 1958 Agreement, except Japan (objection deposited - Depository Notification C.N.1380.2000.TREATIES-6 of 4 January 2001).

REGULATION NO. 100 (Battery electric vehicles)

Documentation: TRANS/WP.29/GRPE/2000/9 and informal document No. 8 of annex 1 to this report.

27. The expert from OICA introduced a proposal (informal document No. 8) to modify document TRANS/WP.29/GRPE/2000/9 in order to reduce type approval costs. In this respect, he suggested that both the battery and the recharger should be tested together. The amendment proposed by informal document No. 8 was adopted and is reproduced below.

Paragraph 5.3.1., amend to read:

"..... in paragraph 1 of this Regulation. Road vehicles equipped with non-aqueous electrolyte batteries or sealed "gas recombinant" batteries are excluded."

28. GRPE adopted the text of the document TRANS/WP.29/GRPE/2000/9 as amended (para. 27, above) and requested the secretariat to submit it to WP.29 and AC.1 for consideration during their sessions of June 2001 as a proposal for draft Supplement 1 to Regulation No. 100.

REGULATION NO. 101 (Emissions of carbon dioxide and fuel consumption of M1 and N1 vehicles)

Documentation: TRANS/WP.29/GRPE/2000/12.

29. Following the modifications agreed for document TRANS/WP.29/GRPE/2000/10/Rev.1 (see para. 20 above), GRPE invited the expert from France to propose similar amendments to document TRANS/WP.29/GRPE/2000/12 for consideration at the next session in May/June 2001.

PERSPECTIVES IN TRANSPORT AND THE ENVIRONMENT

(a) Technical requirements on vehicles after the year 2000

30. The expert from the European Commission briefed GRPE about the development of exhaust emission requirements in EC (see paras. 47 to 51 below).

(b) Reduction of carbon dioxide emissions and fuel consumption

31. This item was also addressed by the expert from the European Community in his account of the development work. GRPE agreed that, in the future session agendas, the question of perspectives in transport and the environment should not be listed as a separate item, but be considered in conjunction with the exchange of information on national and international requirements on emissions.

PARTICULATE EMISSIONS

Documentation: Informal documents No. 6., 11., 12 of annex 1 to this report.

31. Following the request of GRPE during its fortieth session (TRANS/WP.29/GRPE/40, para. 59), Dr. M. Krzyzanowski from the World Health Organization (WHO) presented a paper on health risks related to the emission of particulate matter (PM) and resulting air pollution (Note by the secretariat: the paper is available in the GRPE website, under "Informal documents, forty-first session). Mr. Krzyzanowski noted that PM vary in size (sometimes by the level of magnitudes), chemical content, weight, and shape. His presentation concentrated on PM of 10 and 2.5 micrometers. He stated that there was no threshold or safe level to determine the effect of PM on health. Risk estimates must be used while setting standards. Since there were no guidelines available from WHO, Governments have to set their own policy. He explained that there were short and long term effects of PM on pulmonary/respiratory as well as cardio-vascular systems. The study seemed to indicate that sulphates (sulphur emissions) were the most dangerous engine emissions. The ratio of PM 2.5 to PM 10 was analysed. Although the study was not yet concluded, it pointed to the fact that with PM 2.5 the risk to health was higher. Ultra-fine particles (smaller than PM 2.5 seemed to be even more dangerous to humans and 40 per cent of the ultra fine particles in the air were contributed by road transport. Power generation processes were the main contributor of PM 10. WHO developed a theory that in the combination of PM in the air the PM 10 might be acting as coagulant for the fine and ultra-fine particles.

33. Speaking for GRPE, the Chairman thanked Dr. Krzyzanowski and acknowledged his presentation as an important base for future work on the regulatory limitation of internal combustion engine emissions. He also expressed the hope that this presentation was a beginning of closer cooperation between GRPE and WHO.

34. The expert from CONCAWE introduced the paper describing two projects initiated by EC (DG TREN) (informal document No. 11). The project "ARTEMIS" should provide improved modelling of transport emissions; it may provide a more consistent inventory of motor vehicle emissions. "PARTICULATES", the second project, which was a part of a common project cluster with "ARTEMIS", concentrated on number, size and composition of PM and its effect on health. The whole programme should be concluded by the end of year 2003.

35. The expert from the United Kingdom presented a proposal concerning the future programme of the GRPE PM Emission sub-group (informal document No. 6.) GRPE noted that the experts from Germany, France, Netherlands, Sweden and the United Kingdom had presented the proposal to the EC suggesting research and development in order to improve the particulate matter emission control (attachment to informal document No. 6).

36. With respect to the world-wide interest in reducing PM emission, the expert from the United Kingdom suggested that GRPE should set a PM emission sub-group with a two-year time frame programme and proposed its Terms of reference (informal document No. 12). The goal of the work would be to establish two protocols for PM emission testing, one for light-duty vehicles and one for heavy-duty vehicles, under Regulation No. 49. In their work, the informal group could use the transient test cycle procedure as presented earlier in the session (see para. 5 above).

37. Although the work would concentrate only on the carbonaceous PM, the group may look also at the sulphur and sulphate emission. The time schedule for the first phase of the work was also introduced (informal document No. 6). The result of the first phase should be the starting point for further work to determine the proper values for type approval procedure. The overall goal would be to develop a global technical regulation by the end of the decade. The expert from the United Kingdom invited all Governments to join the effort.

38. The expert from the United States of America was concerned that the proposed programme did not make any reference to the current emission test methods. Nevertheless, she supported the development of a type approval process, which might lead to a new global technical regulation.

39. The expert from OICA agreed with the expert from the United States of America. He supported the programme but cautioned not to forget the current procedures. The new procedures should be monitored from the point of view of the current measurement methods. OICA asked to add a phrase to the proposal, which would state the need for comparison of the new-developed method with the existing ones.

40. The expert from the United Kingdom explained that it was not the purpose of the proposed programme to become a substitute for the current emission measurement system but to add to it or modify it, in order to improve the PM emission regulatory control.

41. The expert from Switzerland supported the programme and indicated that his country was prepared to participate in the work of the group.

42. The expert from CONVAWE also supported the programme. However, he recommended that, during the work, while concentrating on carbonaceous particles, the group should also pay attention to aerosols.

43. Noting the general support, GRPE adopted the Terms of Reference of the Particulate Matter Emission sub-group (informal document No. 12, as reproduced in annex 2 to this report). It also agreed that the PM sub-group would meet during the next session of GRPE (see para. 81.(b) below).

EXCHANGE OF INFORMATION ON NATIONAL AND INTERNATIONAL REQUIREMENTS
ON EMISSIONS

Documentation: Informal documents Nos. 2, 5 and 10 of annex 1 to this report.

44. The expert from Japan introduced informal document No. 2 describing the Japanese policy regarding vehicle emissions. He informed GRPE that his Government was moving up in time the targets for stronger emission regulations. These regulations established strict laws restricting the use of offending vehicles; diesel vehicles without PM filters would not be allowed in certain urban areas. Furthermore, the Japanese Government intended to further tighten the in-use emission standards.

45. The expert from the United States of America informed GRPE about two recent regulatory activities (informal document No. 5.). The final regulatory rule for heavy-duty engines and vehicle standards and highway diesel fuel sulphur content, and the advance notice for regulation of emissions of non-road engines and highway motorcycles.

46. When asked about the definition of a "highway motorcycle", the expert from the United States of America explained that all motorcycles licensed by a state authority as vehicles to be operated on public roads were considered to be "highway motorcycles".

47. The experts from EC gave an exhaustive report on the European Community emission requirements (informal document No. 10.).

48. With regard to Directive 70/220/EC and the light-duty vehicles powered by positive-ignition engines using gas fuel, such vehicles would have to be fitted with an on-board diagnostic system (OBD): new M1 2500 kg and N1 class I vehicles must have OBD by 1 January 2003 and all in-use vehicles of this type by 1 January 2004. New larger M1 and N1 vehicles have to have OBD by 1 January 2004 and all such vehicles by 1 January 2007. The amendment regarding cold start emissions and the allowable emission values were still being discussed by the European Parliament and the Council.

49. The Commission was considering further adaptations of Directive 70/220/EC with regard to replacement catalysts vis-à-vis OBD compatibility, in-use conformity testing, and reference fuels for testing to the 2005 emission limits.

50. The technical adaptation of Directive 88/77/EEC was now discussed in the European Parliament and it was expected that it could be adopted by February. The amendments improved control against the use of defeat devices and irrational emission control strategies, modified ETC statistical criteria for gas engines, redefined NG and LPG reference fuels and extended the Directive to heavy-duty vehicles fuelled by ethanol.

51. The Commission proposal for further emission restrictions applicable to 2- and 3-wheeled motor vehicles (Directive 97/24/EC), was adopted in June 2000. The work on this proposal involved update of the motorcycle emission test cycle. Hence, the Commission was awaiting the results of the discussions in GRPE to be able to modify the indicative emission limits in relation to the new world motorcycle emission test cycle.

52. The expert from OICA informed GRPE of OICA's intention to initiate work leading to the creation of a global technical regulation regarding OBD, especially for heavy-duty vehicles. OICA was going to prepare a draft policy document addressing the question of the OBD. In support of OICA's effort, the

expert from Germany distributed a chart representing NO_x emissions from different type of engines. He draw GRPE's attention to the fact that the NO_x emissions from diesel engines were eight times higher than from the gasoline-fuelled engines. He concluded that introduction of OBD could become a very important issue for GRPE.

53. Several delegates supported the OICA's initiative. The expert from the EC reiterated that the Commission continued to work on the subject of technology and use requirements of OBD. He was also of the opinion that there was a need for the work towards the global technical regulation in this area. The delegate from the United States of America stated that, during the next WP.29 session, her delegation would suggest work on the development of a global technical regulation regarding OBD as one of the priorities. The expert from Japan expressed his personal opinion supporting also the general agreement for the need for a global technical regulation regarding OBD.

54. GRPE Chairman concluded that OICA should prepare a communication to WP.29. He would advocate OICA's suggestion at WP.29; however, GRPE would not start any work on the subject without WP.29's directive.

OTHER BUSINESS

(a) Replacement catalytic converters for vehicles with OBD

55. There were no new documents to be presented at this time. However, in view of the discussion during the session (see para. 49 above), the Chairman suggested that the subject should stay on the agenda for the next meeting.

(b) Evolution of fuel quality

Documentation: "World-wide Fuel Charter (April 2000)" (see annex 1 to this report).

56. The expert from OICA distributed the "World-wide Fuel Chart". He said that it had been published to promote greater understanding of the fuel quality needs of motor vehicles technologies and to harmonize fuel quality around the world, in accordance with such vehicle needs.

57. The expert from CONCAWE evaluated the Fuel Charter as a very positive contribution. He reiterated the need of sulphur free fuels for the new technology engines. He said that the fuel composition was very important in view of the new engine technologies. He noted that the aspect of lubricant content in the fuels was not mentioned in the document. He stated that CONCAWE was looking forward to working with other partners on reduction of PM emissions.

58. Although GRPE did not have a mandate to regulate fuels, the Chairman welcomed the willingness of fuel producers to co-operate with the vehicle manufacturers. Such co-operation could help in developing new technologies and achieving maximum effectiveness of anti-pollution devices.

(c) Development of a world-wide motorcycle emission test cycle (WMTC)

59. The Chairman of the WMTC informal group reported orally on the results of the meeting, which was held on 16 January 2001 (morning and afternoon). He informed GRPE that the minutes of the first WMTC meeting (Geneva, 23 May 2000)

had been approved during the meeting. He recalled that there had also been two technical meetings of the Fundamental Elements (FE) group since the last GRPE.

60. He said that the main part of the work on the World Harmonized Motorcycle Test Procedure had been carried out in the Netherlands and in Germany (by TNO and TÜV). He presented the three-part test procedure (each part representing different driving area/pattern - urban, rural and highway). He envisaged that by May 2001 there might be a proposal for a new Global Harmonized Motorcycle Test Procedure and that the bench validation programme might start. He said that the validation programme was expected to last till the end of 2002 and the final proposal for the test cycle might be ready for consideration by GRPE at its January 2003 session.

61. Giving details of the progress, the Chairman of the WMTC group said that the gear-shift model for the test cycle was almost ready. He also mentioned that the ISO/TC22/WG17 working group was working on cooling requirements, sampling, bench setting and settings of vehicle inertia.

62. The expert from ISO stated that the cycle development group was faced with budgetary problems. In the following discussion, government delegations did not volunteer any funds for the project; however, they offered the use of their laboratories for the validation programme.

63. GRPE Chairman recalled that, since the EC would like to adopt the new test cycle into their Directive as a base for the 2006 emission levels, the test cycle should be compatible with the Commission's intentions. He acknowledged that the proposed plan of work would make the test cycle available sufficiently in time for this purpose.

64. GRPE noted the oral report by the Chairman of WMTC group and agreed that the next meeting of this group should be held in May 2001 during the forty-second GRPE session (see para. 81.(c) below).

d) Application of ECE Regulations to hybrid vehicles

Documentation: TRANS/WP.29/GRPE/2001/1.

65. The expert from France presented a document, which identified regulations that would be affected by the provisions concerning hybrid vehicles (TRANS/WP.29/GRPE/2001/1).

66. The expert from Netherlands noted that the document did not mention all types of hybrid vehicles. On the suggestion of the GRPE Chairman, the experts from the Netherlands and France should develop a common and complete document, which should contain a matrix of possible hybrid vehicle designs.

67. The expert from Germany welcomed the suggested approach, because in his country discussions concerning this subject had not yet been concluded. According to him, the French proposal was a very important document and Germany would like to fully contribute to its development.

68. The expert from OICA stated that vehicle manufacturers were very interested in defining rules for hybrid vehicles and offered the participation of his organization in the work. An offer of co-operation was also made by the expert from Italy, who proposed to add more regulations to the French list, specifically regulations regarding fuel system integrity during and after the crash.

69. The Chairman of GRPE requested written submissions from all interested delegates and said that they should be submitted before the May session of GRPE. He indicated that, if so desired by GRPE, an ad-hoc group could be established and its scope of work determined.

- (e) Power of engines intended to be fitted on non-road mobile machinery and agricultural tractors

Documentation: TRANS/WP.29/GRPE/2001/4.

70. The expert from Italy introduced a proposal for a draft Regulation concerning the net power of internal combustion engines for agricultural and forestry tractors and for non-road mobile machinery (TRANS/WP.29/GRPE/2001/4). He stated that the existing Regulation No. 96 was not adequate in view of the new technologies. The approvals granted under the proposed Regulation would be based on the engine family derived from the bench testing performed on a parent engine.

71. Following the exchange of views on the proposal, the expert from the United States of America was asked to provide the new US definition of the rated speed of the engine in order to consider it for the text of the proposed draft Regulation.

72. Although the expert from CEMA was in favour of the proposal he asked for a clarification regarding the principal differences between current Regulation No. 96 and the proposal. He pondered the possibility of modification of the existing Regulation. The expert from Italy explained that in the new draft Regulation the net power of an engine was defined in relation to the whole engine family, as described in the proposal.

73. Referring to an error in the proposal, the expert from Italy said that paragraph 2.9. should be redrafted to correspond to paragraph 5.3.2.

74. The GRPE Chairman requested that all additional comments and reservations be submitted to the expert from Italy in time to prepare any necessary amendments for the May session.

- (f) Regulation No. 67 (Equipment for LPG)

Documentation: TRANS/WP.29/GRPE/2001/5 and informal document No. 7 of annex 1 to this report.

75. The expert from AEGPL presented draft amendments to the 01 series of amendments to Regulation No. 67 (informal document No. 7.). After an exchange of views, the secretariat was requested to distribute it as an official working document for consideration at the next session.

76. The expert from the Netherlands presented a draft corrigendum to the 01 series of amendments to Regulation No. 67 (TRANS/WP.29/GRPE/2001/5), correcting errors in paragraph numbering and subsequent erroneous referencing. GRPE adopted the document and agreed to transmit it to WP.29 and AC.1 for consideration in their sessions of June 2001, as a draft Corrigendum 2 to the 01 series of amendments to Regulation No. 67.

(g) Regulation No. 96 (Off-road engines)

Documentation: Informal document No. 9 of annex 1 to this report.

77. The expert from Poland presented a proposal to add, to the 01 series of amendments to Regulation No. 96, a definition of "placing in the market" and to make several other changes mainly to align Regulation No. 96. with the EC Directive 97/68/EC (informal document No. 9.).

78. The expert from the United Kingdom expressed his concern that the new definition would prevent the possibility of importation and use of prototypes.

79. The expert from CEMA was concerned that the proposal would make Regulation 96 applicable only to vehicles category T (tractors). This would prevent the engine family from being approved to be utilized for other applications.

80. The expert from EC asked to have some time to study the document more closely before approving it. GRPE agreed to continue the discussion on this subject during its next session in May 2001.

AGENDA FOR THE NEXT SESSION

81. In conclusion of the forty-first session of GRPE, the Chairman proposed that in May GRPE would begin with the official session starting on Tuesday 29 May 2001 at 9.30 h and ending on Wednesday 30 May at 17.30 h. The Particulate Matter Emission sub-group would meet on Thursday for the whole day. The WMTC sub-group would meet on Friday at 9.30 h (morning session only). GRPE accepted the proposal and for its forty-second session, agreed the following agenda:

(a) Forty-second session of the GRPE proper

To be held at Geneva, from Tuesday 29 May 2001 (9.30 h) to Wednesday 30 May (17.30 h). 1/:

1. Regulation No. 49 (Emissions of C.I., NG, and P.I.(LPG) engines)
 - 1.1. Development of the emission testing procedure (WHDC)
2. Particulate emissions
3. Development of a world-wide motorcycle emission test cycle (WMTC)
4. Regulation No. 110 (Specific components for CNG)
5. Regulation No. 101 (Emissions of carbon dioxide and fuel consumption of M1 and N1 vehicles)
6. Regulation No. 67 (Equipment for LPG)
7. Replacement catalytic converters for vehicles with OBD
8. Application of ECE Regulations to hybrid vehicles
9. Regulation No. 96 (Off-road engines)
10. Power of engines intended to be fitted on non-road mobile machinery and agricultural tractors

11. Exchange of information on national and international requirements on emissions 2/

12. Other business

12.1. Evolution of fuel quality

12.2. On-board diagnostics for heavy-duty vehicles

(b) Informal meeting of the working group on particulate emissions

To be held at Geneva, on Thursday 31 May 2001 (9.30 h to 17.30 h). The agenda of the session will be prepared and distributed to the GRPE members prior to the meeting by the United Kingdom - the originator of the informal group.

(c) Informal meeting of the GRPE working group on the world-wide motorcycle emission test cycle (WMTC)

To be held at Geneva, on Friday, 1 June 2001 (9.30 h to 12.30). The agenda of the session will be prepared and distributed by the WMTC secretariat to the WMTC members prior to the meeting.

1/ As part of the secretariat's efforts to reduce expenditure, all the official documents distributed prior to the session, by mail and/or placed on the web-site, will not be available in the conference room for distribution to session participants. Delegates are kindly requested to bring their copies of documents to the meeting. (The web-site address of the GRPE documents: <http://www.unece.org/trans/main/wp29/wp29wgs/wp29grpe.html>)

2/ Delegations are invited to submit brief written statements on the latest status in national requirements and, if necessary, to supplement this information orally.

Annex 1

LIST OF INFORMAL DOCUMENTS DISTRIBUTED WITHOUT A SYMBOL DURING THE SESSION

No.	Transmitted by	Agenda item	Language	Title
1.	WHDC inf. group	1.	E	Development of a World-wide Harmonised Heavy-duty Engine Emission Test Cycle. (Draft) Executive Summary Report.
2.	Japan	8.	E	Future Policy for Motor Vehicle Exhaust Emission in Japan
3.	WHDC ISO group	1.	E	World-wide Harmonised Heavy Duty Emission Certification Procedure Exhaust Emissions Measurement ISO second Interim Report
4.	Italy	3.	E	Proposal for a Corrigendum to Regulation No. [110]
5.	United States of America	8.	E	Recent Rulemaking in the United States
6.	United Kingdom	7.	E	Proposal concerning the future programme of the GRPE Particle Emission sub-group
7.	AEGPL	9.6.	E	Draft amendments to UN/ECE Regulation 67-01 series with a view to update the requirements on the LPG vehicle connectors
8.	OICA	4.	E	OICA proposal for draft amendments to Regulation No 100 concerning the approval of battery electric vehicles with regard to specific requirements for the construction and functional safety
9.	Poland	9.7.	E	Proposal for draft amendments and comments to 01 series of amendments to Regulation No. 96.
10.	EC	8.	E	Update on European Community Emission Requirements
11.	CONCAWE	7.	E	DG TREN "Particulates" project. Improving Understanding and Measurement of Automotive Particulates and Emission Models

No.	Transmitted by	Agenda item	Language	Title
12.	United Kingdom	7.	E	Proposal concerning the future programme for a GRPE Particulate Emission Sub-group. (Terms of Reference)
-	Germany	1.1.	E	Nox-Emissions of different Passenger Car Emission Standards in Germany
-	OICA	9.2.	E	World-wide Fuel Charter (April 2000)

Annex 2

TERMS OF REFERENCE OF A GRPE
PARTICULATE EMISSIONS SUB-GROUP ADOPTED BY GRPE AT ITS FORTY-FIRST SESSION

To develop type approval test protocols, with instrumentation, to assess and control nano-particle emissions from (a) light-duty vehicles and from (b) heavy-duty engines within the range of 10 to 500nm (the exact range to be confirmed based on guidance of medical experts with respect to health effects).

Based on current research, it is anticipated that for best repeatability and reproducibility, the tests should be based on transient cycles. The cycles selected for this purpose should, if possible, conform to current regulated test cycles, i.e. European Light-duty and heavy-duty (ETC) cycles, US Federal test cycles and also the WHDC cycle.

The protocol should focus only on the accurate assessment of carbonaceous particles within the measurement range indicated.

The group is also required to provide an assessment of current and advanced particulate control technology, as measured on the new protocol, to facilitate the development of new regulations aimed at further reductions in nano-particle emissions.

The Group is requested to deliver its final report to GRPE in January 2003.
