

# COMMISSION OF THE EUROPEAN COMMUNITIES

COM(81) 635 final

JRG

Brussels, 10 November 1981

## COMMISSION COMMUNICATION TO THE COUNCIL

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on the follow-up to the ad hoc conference on the approximation of noise  
measurement methods

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COMMISSION COMMUNICATION TO THE COUNCIL ON THE FOLLOW-UP TO THE AD HOC  
CONFERENCE ON THE APPROXIMATION OF NOISE MEASUREMENT METHODS

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1. INTRODUCTION

An ad hoc conference on the approximation of the methods of measuring the noise emitted by site equipment and domestic appliances was held in Washington from 8 to 12 December 1980 as a result of the initiative of the United States at the OECD high-level conference on noise held in Paris.

The Commission presented the conclusions of this meeting to the Council Working Party on the Environment verbally at a meeting held on 16 January 1981 (1), the main points being as follows :

- There is a need to approximate noise measurement methods for commercially significant equipment.
  
- The priorities as regards the approximation of measurement methods should be established on the basis of the following objective criteria :
  - (a) environmental requirements;
  - (b) the commercial significance of the types of equipment in question;
  - (c) provisions in force, at the draft stage, or planned.
  
- A second meeting will be held in Brussels in order :
  - (a) to determine the products for which efforts will be made to approximate measurement methods as a matter of priority;
  - (b) to organize comparative tests;
  - (c) to define the basic criteria for the harmonized measurement methods, and
  - (d) to decide which would be the most appropriate standardization framework for the requisite consultations between the officials with responsibility for the relevant provisions.

At the meeting held on 20 March 1981 (2), the Commission informed the Working Party on the Environment that it intended to submit proposals on the further work to be carried out in order to give practical expression to these conclusions.

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(1) ENV/15/4482/81, 18 February 1981

(2) ENV/51/5753/81, 3 April 1981

These proposals concern :

- the site equipment for which it would be desirable to approximate measurement methods as a matter of priority;
- the possibility of comparative testing;
- the basic criteria for the harmonized measurement methods, and;
- the appropriate procedure and framework.

## 2. NUMBERS OF ITEMS OF, AND STATISTICS ON TRADE IN, SITE EQUIPMENT

It was acknowledged at the ad hoc conference on noise that the approximation of noise measurement methods might help improve the environment and facilitate the pooling of information on, and the dismantling of technical barriers to, trade in the products concerned. Consequently, the criteria for selecting the equipment for which it would be desirable to approximate noise measurement methods as a matter of priority should be based both on the need to protect the environment and on trading considerations.

Where environmental protection is concerned, the needs in question are directly connected with the environmental impact of the various types of site equipment. It would be reasonable to assume, bearing in mind these machines' noise levels, that the impact is directly proportional to the number of such machines in the Community. This figure will constitute a good indicator of the environmental impact of site equipment.

Where trade is concerned, the relevant figures are the import-export statistics relating to trade between the European Community and the rest of the world. Although the data at the Commission's disposal are not complete they do make it possible to give some indication of the priorities to be selected.

2.1. Number of items of site equipment in the Member States

The figures available for 1975 to 1978 relate to only three Member States, but they can be extrapolated without too much distortion to the other Member States and thus give an overall impression for the Community. The following table indicates what the list of priorities would be if only environmental considerations are taken into account, i.e. :

- earthmoving equipment
- compressors
- tower cranes and mobile cranes

	France	R.F.A.	Nederland
Compressors	50.000	51.000	6.000
Earthmoving equipment	80.000	82.000	7.500
Dumpers	2.000	10.000	-
Compactors	2.000	2.500	-
Concrete-mixer lorries	3.500	4.500	100
Concrete pumps	3.500	2.000	150
Cranes	26.000	45.000	4.000

2.2. Statistics on trade in certain types of site equipment

The statistics are provided by the Community Statistical Office and are set out in tables Ia to If. On the basis of these figures, attention should focus on earthmoving equipment and pneumatic equipment as a matter of priority.

As might have been expected, therefore, there is agreement between the environmental and commercial considerations.

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### 3. SITE EQUIPMENT FOR WHICH IT WOULD BE DESIRABLE TO APPROXIMATE NOISE MEASUREMENT METHODS AS A MATTER OF PRIORITY

#### 3.1. Progress made in the European Community framework

In 1975, the Commission submitted to the Council a number of proposals for directive designed to limit the noise emitted by site equipment.

Realizing that the existence of various different methods of measuring noise constitutes a problem, the Commission first of all proposed an outline measurement method setting out the main guidelines for describing a sound source used outdoors. This proposal was adopted at the end of 1978 (1) and was subsequently amended to include a method of measuring noise at the operator's position of site equipment. Six proposals for separate directives have since been submitted relating to :

- pneumatic drills and concrete-breakers;
- compressors;
- earthmoving equipment (bulldozers, loaders and shovels);
- tower cranes;
- electric generator sets;
- electric welding equipment.

The latter are still awaiting adoption by the Council, and other proposals are being prepared in this sphere. These separate directives relate to the proposed framework directive dealing with construction equipment (2).

Two criteria have guided the Commission in the selection of the items of equipment in question :

- the protection of the environment, and
- the removal of technical barriers to trade.

#### 3.2. Priorities as regards the approximation of measurement methods

Within the Commission Working Party on Noise and Vibration, the Commission and national experts have examined the question of the equipment which should be examined as a matter of priority with a view to approximating noise measurement methods in a broader framework than that of the European Community.

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(1) Council Directive 79/113/EEC of 19.12.78

(2) Proposed Directive - OJ C 82 of 14.4.75

In the light of this consultation and an examination of the statistics quoted in point 2 above the proposed order of priority is as follows :

- earthmoving equipment
- compressors
- pneumatic drills
- tower cranes
- mobile cranes
- electric generator sets.

#### 4. THE POSSIBILITY OF COMPARATIVE TESTING

Of the site equipment mentioned above only compressors are covered by provisions enacted in non-Community countries. The United States and Norway have brought into force specific regulations on the subject. As a result of representations made to the Commission by the US Environmental Protection Agency, comparative tests have been carried out on the methods of measuring the noise emitted by compressors, and the findings have been published in a joint report.

The Commission is of the opinion that no further testing for this type of equipment is needed at present since the Norwegian regulation refers to ISO measurement method 4872 version B which is broadly similar to the method described in Directive 79/113/EEC.

As regards the other types of equipment, only the testing of pneumatic drills might be envisaged after analysis of the draft method.

##### 5. BASIC CRITERIA FOR THE HARMONIZED MEASUREMENT METHODS

The purpose of measurement methods is to determine the acoustic characteristics of site equipment or any type of machine. The values obtained using these methods can be used either to determine the state of the art or to check a machine's compliance with technical specifications. Harmonization of these methods will make it possible to compare the measurement results all the more easily and all the more reliably to the extent that these methods are :

- simple;
- inexpensive, and
- reproducible.

As far as possible, the way in which the results are expressed should be an intrinsic characteristic of the machines tested and should make it possible to deduce their environmental impact.

These principles guided the Commission in selecting the method specified in Directive 79/113/EEC and in the methods relating to the equipment concerning which it has submitted proposals to the Council.

In preparing standard 4872, the ISO followed the same principles. There is therefore perfect agreement between the ISO standard and Directive 79/113/EEC.

Consequently, the Commission is proposing that these principles should constitute the basic criteria for the harmonized methods. In particular :

- sound measurements should be carried out in free-field conditions on a reflecting plane;
- the acoustic criterion for the environment should be expressed by the sound power level of the source tested.

##### 6. FRAMEWORK AND PROCEDURE FOR APPROXIMATING MACHINE NOISE MEASUREMENT METHODS

The appropriate framework and the procedure for finalizing the measurement methods will depend on the discussions at, and conclusions of, the second meeting.

Depending on the priorities set, the framework could be either the OECD or a narrower framework, or even bilateral consultations.



Whatever the framework chosen, there must be close collaboration with the ISO.

Table II, which is taken from the Regulatory Information Summary, shows that efforts should be made to harmonize methods mainly in conjunction with the EFTA countries.

## 7. CONCLUSIONS

In conclusion, the Commission would suggest that at the second meeting, to be held in Brussels in November, the European Community should work towards the following conclusions.

7.1. Efforts should be made to approximate noise measurement methods for the following types of site equipment :

- earthmoving equipment (hydraulic and rope-operated shovels, bulldozers, loaders and shovel loaders);
- compressor units;
- pneumatic drills and concrete-breakers;
- mobile cranes and tower cranes;
- electric welding equipment and generator sets.

7.2. No comparative testing should be envisaged at present.

7.3. The basic criteria for the common measurement methods should be those in the Annexes to Council Directive 79/113/EEC of 19 December 1978.

7.4. The framework and procedure for finalizing the measurement methods will be decided at this meeting in the light of the conclusions reached at the meeting concerning the equipment to which priority should be given.

GENERAL DATA - EARTHMOVING EQUIPMENT

TABLE Ia

	exports			imports		
	1975	1979	variation %/75	1975	1979	variation %/75
Intra-EEC trade (10 Member States)	377.312	865.928	+ 130	-	-	-
Extra-EEC trade	806.312	1.050.809	+ 30	138.386	260.836	+ 88
Western industrialized third countries	303.364	486.154	+ 60	129.947	254.553	+ 96
EFTA countries	80.688	199.257	+ 150	25.630	81.629	+ 220
Developing countries	472.105	510.787	+ 8	-	-	-
ACP (Lomé Convention) countries	75.934	70.393	- 7	-	-	+ 87
Class 3 countries	30.473	51.460	+ 70	2.068	3.868	-
OPEC countries	313.672	273.933	- 13	-	-	-
Central and South America and the Caribbean	51.882	50.410	- 3	-	-	-

		IMPORTS	%	EXPORTS	%
<u>1975</u>					
base year	WORLD	300.191	100	652.891	100
100 %	INTRA-EC	242.653	80.8	217.598	33.3
	USA	22.033	7.3	29.428	4.5
	JAPAN	7.550	2.5	1.628	-
	EFTA	14.558	4.8	47.449	6.2
<u>1976</u>					
49.9%	WORLD	449.901	100	840.912	100
47.8%	INTRA- EC	358.733	79.7	324.810	38.6
64.9%	USA	36.329	8.1	20.377	2.4
106.8%	JAPAN	15.617	3.5	919	0.1
48.9%	EFTA	21.678	4.8	89.518	10.6
<u>1977</u>					
67.9%	WORLD	504.247	100	988.236	100
74.2%	INTRA-EC	422.697	83.8	407.573	41.2
23.6%	USA	27.233	5.4	31.722	3.2
91.4%	JAPAN	14.449	2.9	1.799	0.2
63.6%	EFTA	23.813	4.7	113.118	11.4
<u>1978</u>					
100.2%	WORLD	600.916	100	1.104.606	100
103.2%	INTRA-EC	493.037	82	478.650	43.3
14.9%	USA	25.321	4.2	83.064	7.5
124.5%	JAPAN	16.951	2.8	3.013	0.3
153.4%	EFTA	36.895	6.1	110.380	9.99
<u>1979</u>					
146.8%	WORLD	740.999	100	1.200.671	100
148.2%	INTRA- EC	602.371	81.3	583.603	48.6
142.3%	USA	31.357	4.2	72.536	6.0
189.2%	JAPAN	21.837	2.9	1.191	0.09
131.3%	EFTA	48.228	6.5	140.346	11.7

BULLDOZERS 84.23-13

1000 EUA

	IMPORTS	%	EXPORTS	%
<u>1975</u>				
WORLD	79.585	100	215.132	100
INTRA-EC	40.938	51.4	44.249	20.6
USA	23.252	29.2	6.352	3.0
JAPAN	11.405	14.3	-	-
EFTA	-	-	5.625	-
<u>1976</u>				
WORLD	120.998	100	203.316	100
INTRA-EC	58.777	48.6	60.426	29.7
USA	37.942	31.3	11.198	5.5
JAPAN	20.087	16.6	-	-
EFTA	1.247	1.0	8.047	4.0
<u>1977</u>				
WORLD	112.793	100	209.350	100
INTRA-EC	66.535	59.0	54.267	25.9
USA	23.492	20.8	11.883	5.7
JAPAN	17.396	15.4	26	0.01
EFTA	2.722	2.4	8.644	4.1
<u>1978</u>				
WORLD	115.316	100	282.555	100
INTRA-EC	66.349	57.5	58.061	20.5
USA	25.559	22.2	17.208	6.1
JAPAN	16.179	14.0	-	-
EFTA	6.199	5.4	9.426	3.3
<u>1979</u>				
WORLD	154.124	100	256.438	100
INTRA-EC	89.503	58.1	82.040	32.0
USA	36.895	23.9	14.662	5.7
JAPAN	16.986	11.0	-	-
EFTA	9.282	6.0	11.803	4.6

OTHER MACHINERY 84.23-17

1000 EUA

	IMPORTS	%	EXPORTS	%
<u>975</u>				
WORLD	119.402	100	302.391	100
INTRA-EC	77.206	64.7	102.255	33.8
USA	23.311	19.5	6.953	2.3
JAPAN	8.707	7.3	-	-
EFTA	852	7.1	27.614	7.9
<u>976</u>				
WORLD	169.757	100	343.925	100
INTRA-EC	120.065	70.7	137.662	40.0
USA	25.622	15.1	11.918	3.5
JAPAN	7.103	4.2	-	-
EFTA	14.988	8.8	41.711	12.1
<u>977</u>				
WORLD	169.776	100	377.540	100
INTRA-EC	123.123	72.5	130.505	34.6
USA	24.130	14.2	12.142	3.2
JAPAN	6.508	3.8	-	-
EFTA	14.608	8.6	50.336	13.3
<u>978</u>				
WORLD	181.536	100	391.435	100
INTRA-EC	136.648	75.3	158.597	40.5
USA	19.615	10.8	12.547	3.2
JAPAN	4.338	2.4	178	0.05
EFTA	18.720	10.3	46.877	12.0
<u>979</u>				
WORLD	217.680	100	434.025	100
INTRA-EC	160.096	73.5	174.684	40.2
USA	24.230	11.1	19.038	4.4
JAPAN	7.334	3.4	158	0.04
EFTA	24.119	11.1	47.108	10.9

84.23 - 11 + 13 + 17 : TOTAL

1000 EUA

		IMPORTS	%	EXPORTS	%
<u>1975</u>					
= 100%	WORLD	499.178	100	1.170.414	100
	INTRA-EC	360.797	72.3	364.102	31.1
	USA	68.596	13.7	42.733	3.7
	JAPAN	27.662	5.5	-	-
	EFTA	23.079	4.6	64.399	5.5
<u>1976</u>					
	WORLD	740.656	100	1.388.153	100
	INTRA-EC	537.575	72.6	522.898	37.7
	USA	99.893	13.5	43.493	3.1
	JAPAN	42.807	5.8	919	0.07
	EFTA	37.913	5.1	139.276	10.0
<u>1977</u>					
	WORLD	786.816	100	1.575.126	100
	INTRA-EC	612.355	77.8	592.525	37.6
	USA	74.855	9.5	55.747	3.5
	JAPAN	38.353	4.9	1.825	0.1
	EFTA	41.143	5.2	172.098	10.9
<u>1978</u>					
	WORLD	897.768	100	1.778.596	100
	INTRA-EC	696.034	77.5	695.308	39.1
	USA	70.495	7.9	112.819	6.34
	JAPAN	37.468	4.2	3.191	0.18
	EFTA	61.814	6.9	166.683	9.37
<u>1979</u>					
	WORLD	1.112.803	100	1.891.134	100
	INTRA-EC	851.970	76.6	840.327	44.4
	USA	92.482	8.3	106.236	5.6
	JAPAN	46.157	4.1	1.349	0.07
	EFTA	81.629	7.3	199.257	10.5

COMPRESSOR UNITS

West European Market 1978	:	200 m ECU
Exports to USA	:	5 m ECU
Imports from USA	:	6 m ECU
Exports to other countries excluding West Europe	:	150 m ECU

PNEUMATIC DRILLS AND CONCRETE-BREAKERS

World Market	:	100 %
EEC Production	:	55 %
Intra-EEC Market	:	15 %
Exports to USA	:	2,5 %
Imports from USA	:	5,5 %
Exports third world	:	20 %

TABLE II

	B	D	DK	EIR	F	GR	I	L	NL	UK	CEE	S	N	E	P	CH	A	US	MEX	CAN	ISO
Pneumatic drills	0			0							X	.				X		X			X
Compressors	0			0	0						X	.	0			X		0			X
Shovels	0			0							X		X			X					X
Loaders	0			0							X	.	X			X		X			X
Bulldozers	0			0							X		X			X		X			X
Cranes	0			0							X					X				X	X
Electric generator sets				0							X										
Dumpers				0								X				X					

0 = provisions in force

X = " " preparation

. = " " at draft stage



TABLE III

PROPOSALS CONCERNING :

Pneumatic drills and concrete breakers	OJ Nr. C 82 of 14.4.1975
Tower cranes	OJ Nr. C 54 of 8.3.1976
Current generators for welding	OJ. Nr. C 54 of 8.3.1976
Current generator for power supply	OJ Nr. C 54 of 8.3.1976
Compressors	OJ Nr. C 94 of 19.4.1978
Earthmoving-equipment	OJ Nr. C365 of 31.12.1980

In preparation :

Mobile cranes

