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## Legislation

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## II

*(Acts whose publication is not obligatory)*

## COUNCIL

## COUNCIL DIRECTIVE

of 29 March 1977

on the approximation of the laws of the Member States relating to the driver-perceived noise level of wheeled agricultural or forestry tractors

(77/311/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

provisions concerning the driver-perceived noise level of the abovementioned tractors;

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Whereas the disparities in the abovementioned national laws are likely to hinder trade within the Community and thus impede the establishment and the functioning of the common market,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament<sup>(1)</sup>,

HAS ADOPTED THIS DIRECTIVE:

Having regard to the opinion of the Economic and Social Committee<sup>(2)</sup>,

*Article 1*

Whereas, in order to implement the procedure for EEC type-approval which was the subject of Council Directive 74/150/EEC of 4 March 1974 on the approximation of the laws of the Member States relating to the type-approval of wheeled agricultural or forestry tractors<sup>(3)</sup>, provisions should be adopted to ensure safe working conditions and, in particular, the protection of the hearing of agricultural workers driving such tractors;

1. For the purposes of this Directive, 'agricultural or forestry tractor' means any motor vehicle, fitted with wheels or endless tracks and having at least two axles, the main function of which lies in its tractive power and which is specially designed to tow, push, carry or power certain tools, machinery or trailers intended for agricultural or forestry use. It may be equipped to carry a load and passengers.

Whereas these provisions are particularly necessary as only in two Member States does the law lay down detailed

2. This Directive shall apply only to tractors defined in paragraph 1 which are fitted with pneumatic tyres and have two axles and a maximum design speed of between 6 and 25 km/h.

<sup>(1)</sup> OJ No C 127, 18. 10. 1974, p. 34.

<sup>(2)</sup> OJ No C 125, 16. 10. 1974, p. 30.

<sup>(3)</sup> OJ No L 84, 28. 3. 1974, p. 10.

*Article 2*

1. No Member State may refuse to grant EEC type-approval or national type-approval or prohibit the sale, registration or entry into service of any tractor on grounds relating to the driver-perceived noise level if this level is within the following limits:

90 dB (A) in accordance with Annex I, or

86 dB (A) in accordance with Annex II.

For a transitional period expiring on a date to be fixed before 1 October 1981 in accordance with the procedure laid down in Article 13 of Directive 74/150/EEC, the above limits for tests in accordance with 3.2.1.1 of Annex I and 3.2.2.1 of Annex II shall be increased by 6 dB (A).

2. For a transitional period expiring on a date to be fixed before 1 October 1981 in accordance with the procedure laid down in Article 13 of Directive 74/150/EEC, Member States may authorize the national type-approval, sale, registration or entry into service of tractors without cab if their noise level is within the following limits:

96 dB (A) in accordance with Annex I, or

92 dB (A) in accordance with Annex II.

*Article 3*

For the purposes of this Directive, 'cab' means any structure built of rigid components, transparent or not, which totally encloses the driver and isolates him from the outside, and is capable of being kept permanently closed during service.

*Article 4*

Member States shall take all necessary measures to ensure that in both the sales presentation and advertising there is nothing to suggest that the tractors have features regarding the driver-perceived noise level which they do not in fact possess.

*Article 5*

Any amendments necessary to adapt the requirements of the Annexes to technical progress shall be adopted in accordance with the procedure laid down in Article 13 of Directive 74/150/EEC.

*Article 6*

1. Member States shall bring into force the provisions necessary to comply with this Directive within 18 months of its notification and shall forthwith inform the Commission thereof.

2. Member States shall ensure that the texts of the main provisions of national law which they adopt in the field covered by this Directive are communicated to the Commission.

*Article 7*

This Directive is addressed to the Member States.

Done at Brussels, 29 March 1977.

*For the Council*  
*The President*  
G. KAUFMAN

## ANNEX I

## APPARATUS, CONDITIONS AND METHOD OF MEASUREMENT

## 1. UNIT OF MEASUREMENT AND MEASURING APPARATUS

## 1.1. Unit of measurement

Noise level shall be measured in dB with A-weighting, expressed as dB (A).

## 1.2. Measuring apparatus

Driver-perceived noise level shall be measured by means of a sound-level meter as described in the first edition of Publication 179/1965 of the International Electrotechnical Commission.

In the case of variable readings, the average of the maximum values must be taken.

## 2. CONDITIONS OF MEASUREMENT

Measurements shall be made under the following conditions:

- 2.1. the tractor must be unladen, i.e. without optional accessories, but must include coolant, lubricant, full fuel tank, tools and driver. The latter may not wear any abnormally thick clothing, scarf or hat. There may be no object on the tractor likely to distort the noise level;
- 2.2. the tyres must be inflated to the pressure recommended by the tractor manufacturer, the engine, transmission and drive axles must be at normal running temperature and radiator blinds when fitted must be kept open during measurements;
- 2.3. if it is liable to affect the noise level, extra equipment powered by the engine or self-powered such as windscreen wipers, warm air fan or power take-off, for example, may not be in operation when measurements are being made; parts which normally operate at the same time as the engine, such as the engine cooling fan, for example, must be in operation when measurements are being made;
- 2.4. the test area must be in an open and sufficiently silent location; it may take the form, for instance, of an open space of 50-metre radius, having a central part with a radius of at least 20 m which is practically level, or of a level section having a solid track with as flat a surface and as few gullies as possible. The track must be as clean and dry as possible (e.g. free of gravel, leaves, snow, etc.). Slopes and irregularities are acceptable only if the variations in noise level caused by them lie within the error tolerances of the measuring equipment;
- 2.5. the surface of the track must be such as not to cause excessive tyre noise;
- 2.6. the weather must be fine and dry with little or no wind. The driver-perceived ambient noise level due to the wind or other sources of noise must be at least 10 dB (A) below the noise level of the tractor;
- 2.7. if a vehicle is used for measurements, it must be towed or driven at sufficient distance from the tractor to avoid all interference. During measurements no object interfering with the measurements or reflective surfaces may be located within 20 m of each side of the test track and less than 20 m to the front or rear of the tractor. This condition can be considered fulfilled if the variations in noise level thus caused remain within the error tolerances; if not, the measurements must be discontinued for the duration of the interference;

- 2.8. all measurements in a given series must be carried out on the same track.
3. METHOD OF MEASUREMENT
- 3.1. The microphone must be located 250 mm to the side of the centre plane of the seat, the side being that on which the higher noise level is encountered.
- The microphone diaphragm must face forward and the centre of the microphone must be 790 mm above and 150 mm forward of the seat reference point described in Annex III. Excessive vibration of the microphone must be avoided.
- 3.2. The maximum noise level in dB (A) shall be determined as follows:
- 3.2.1. all openings (e.g. doors, windows) in tractors having a closed series-produced cab structure must be closed during an initial series of measurements.
- 3.2.1.1. During a second series of measurements they must be left open, provided that when open they do not create a road safety hazard, but fold-down or fold-up windscreens must remain closed;
- 3.2.2. noise must be measured using slow sound-level meter response at the load corresponding to the maximum noise in the gear giving the forward speed nearest to 7.25 km/h.
- The governor control lever must be fully open. Starting with no load, the load applied must be increased until the maximum noise level is found. After each increase of load, time must be allowed for the noise level to stabilize before making the measurement;
- 3.2.3. noise must be measured using slow sound-level meter response at the load corresponding to the maximum noise in any gear other than that referred to in 3.2.2 in which the noise level recorded is at least 1 dB (A) above that recorded in the gear referred to in 3.2.2.
- The governor control lever must be fully open. Starting with no load, the load applied must be increased until the maximum noise level is found. After each increase of load, time must be allowed for the noise level to stabilize before making the measurement;
- 3.2.4. noise must be measured at the maximum design speed of the unladen tractor.
- 3.3. The test report shall include noise-level measurements carried out under the following conditions:
- 3.3.1. in the gear giving the speed nearest to 7.25 km/h;
- 3.3.2. in any gear, if the conditions described in 3.2.3 are fulfilled;
- 3.3.3. at maximum design speed.
4. ASSESSMENT CRITERIA
- The measurements described in 3.2.1, 3.2.2, 3.2.3 and 3.2.4 may not exceed the values laid down in Article 2.
-

## ANNEX II

## APPARATUS, CONDITIONS AND METHOD OF MEASUREMENT

## 1. UNIT OF MEASUREMENT AND MEASURING APPARATUS

## 1.1. Unit of measurement

Noise level shall be measured in dB with A-weighting, expressed as dB (A).

## 1.2. Measuring apparatus

Driver-perceived noise level shall be measured by means of a sound-level meter as described in the first edition of publication 179/1965 of the International Electrotechnical Commission.

In the case of variable readings, the average of the maximum values must be taken.

## 2. CONDITIONS OF MEASUREMENT

Measurements shall be made under the following conditions:

2.1. the tractor must be unladen, i.e. without optional accessories, but must include coolant, lubricant, full fuel tank, tools and driver. The latter may not wear any abnormally thick clothing, scarf or hat. There may be no object on the tractor likely to distort the noise level;

2.2. the tyres must be inflated to the pressure recommended by the tractor manufacturer, the engine, transmission and drive axles must be at normal running temperature and, if the engine has cooling louvres, these must remain completely open;

2.3. if it is liable to affect the noise level, extra equipment powered by the engine or self-powered such as windscreen wipers, warm air fan or power take-off, for example, may not be in operation when measurements are being made; parts which normally operate at the same time as the engine, such as the engine cooling fan, for example, must be in operation when measurements are being made;

2.4. the test area must be in an open and sufficiently silent location: it may take the form, for instance, of an open space of 50-metre radius, having a central part with a radius of at least 20 m which is practically level, or of a level section having a solid track with as flat a surface and as few gullies as possible. The track must be as clean and dry as possible (e.g. free of gravel, leaves, snow, etc.). Slopes and irregularities are acceptable only if the variations in noise level caused by them lie within the error tolerances of the measuring equipment;

2.5. the surface of the track must be such as not to cause excessive tyre noise;

2.6. the weather must be fine and dry with little or no wind.

The driver-perceived ambient noise level due to the wind or other sources of noise must be at least 10 dB (A) below the noise level of the tractor;

2.7. if a vehicle is used for measurements, it must be towed or driven at sufficient distance from the tractor to avoid all interference. During measurements no object interfering with the measurements or reflective surfaces may be located within 20 m of each side of the test track and less than 20 m to the front or rear of the tractor. This condition can be considered fulfil-

led if the variations in noise level thus caused remain within the error tolerances; if not, the measurements must be discontinued for the duration of the interference;

- 2.8. all measurements in a given series must be carried out on the same track.

3. METHOD OF MEASUREMENT

- 3.1. The microphone must be located 250 mm to the side of the central plane of the seat, the side being that on which the higher noise level is encountered.

The microphone diaphragm must face forward and the centre of the microphone shall be 790 mm above and 150 mm forward of the seat reference point described in Annex III. Excessive vibration of the microphone must be avoided.

- 3.2. Noise level shall be determined as follows:

- 3.2.1. the tractor must travel along the section at the same test speed at least three times for at least 10 seconds;

- 3.2.2. all openings (e.g. doors, windows) in tractors having a closed series-produced cab structure must be closed during an initial series of measurements.

- 3.2.2.1. During a second series of measurements they must be left open, provided that when open they do not create a road safety hazard, but fold-down or fold-up windscreens must remain closed;

- 3.2.3. noise must be measured at the maximum rpm using slow sound-level meter response i.e. in the gear giving the speed nearest to 7.25 km/h at the rated rpm. The tractor must be unladen when measurements are being made.

4. ASSESSMENT CRITERIA

The measurements described in 3.2.2 and 3.2.3 may not exceed the values laid down in Article 2.

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## ANNEX III

## DETERMINATION OF SEAT REFERENCE POINT

## 1. DEFINITION

- 1.1. The seat reference point (S) shall be the point in the central longitudinal plane of the seat where the tangential plane of the lower backrest and a horizontal plane intersect. This horizontal plane cuts the lower surface of the seat-pan board 150 mm in front of the seat reference point.

## 2. DETERMINATION OF SEAT REFERENCE POINT

- 2.1. The reference point shall be obtained using the device illustrated in figures 1 and 2 of the Appendix to this Annex, which makes it possible to simulate loading by a human occupant.
- 2.2. The seat must be set at the mid point of the range allowed for vertical adjustment, this adjustment being independent of the horizontal adjustment. For purposes of determining the microphone location referred to in section 3 of Annexes I and II, the seat must be at or as near as possible to the mid point of the horizontal adjustment range.

## 3. DESCRIPTION OF THE DEVICE

- 3.1. The device referred to in 2.1 shall consist of a seat-pan board and two backrest boards.
- 3.2. The lower backrest board shall be jointed in the region of the ischium humps (A) and loin (B), the joint (B) being adjustable in height (see figure 2).

## 4. SETTING UP THE DEVICE

The device shall be set up as follows:

- 4.1. the device shall be positioned on the seat;
- 4.2. it shall then be loaded with a force of 550 N at a point 50 mm in front of joint (A), and the two backrest boards shall be lightly pressed tangentially against the backrest;
- 4.3. if it is not possible to determine a definite tangent to the lower area of the backrest, the lower backrest board in vertical position must be lightly pressed against the backrest;
- 4.4. in the case of seats with a suspension adjustable to the driver's weight, the suspension shall be set so that the seat is at a point equidistant from its two extreme positions.
-

## APPENDIX

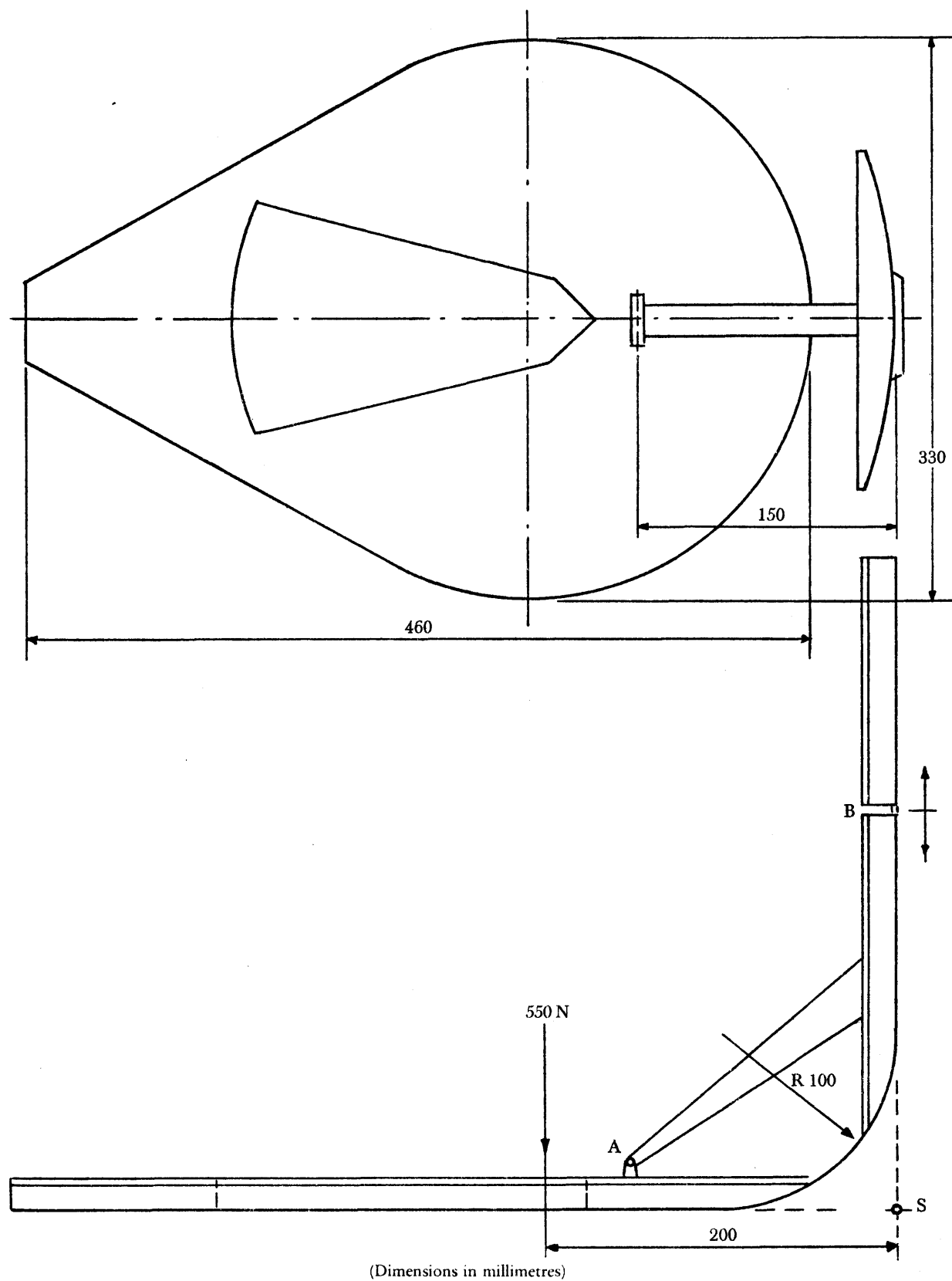
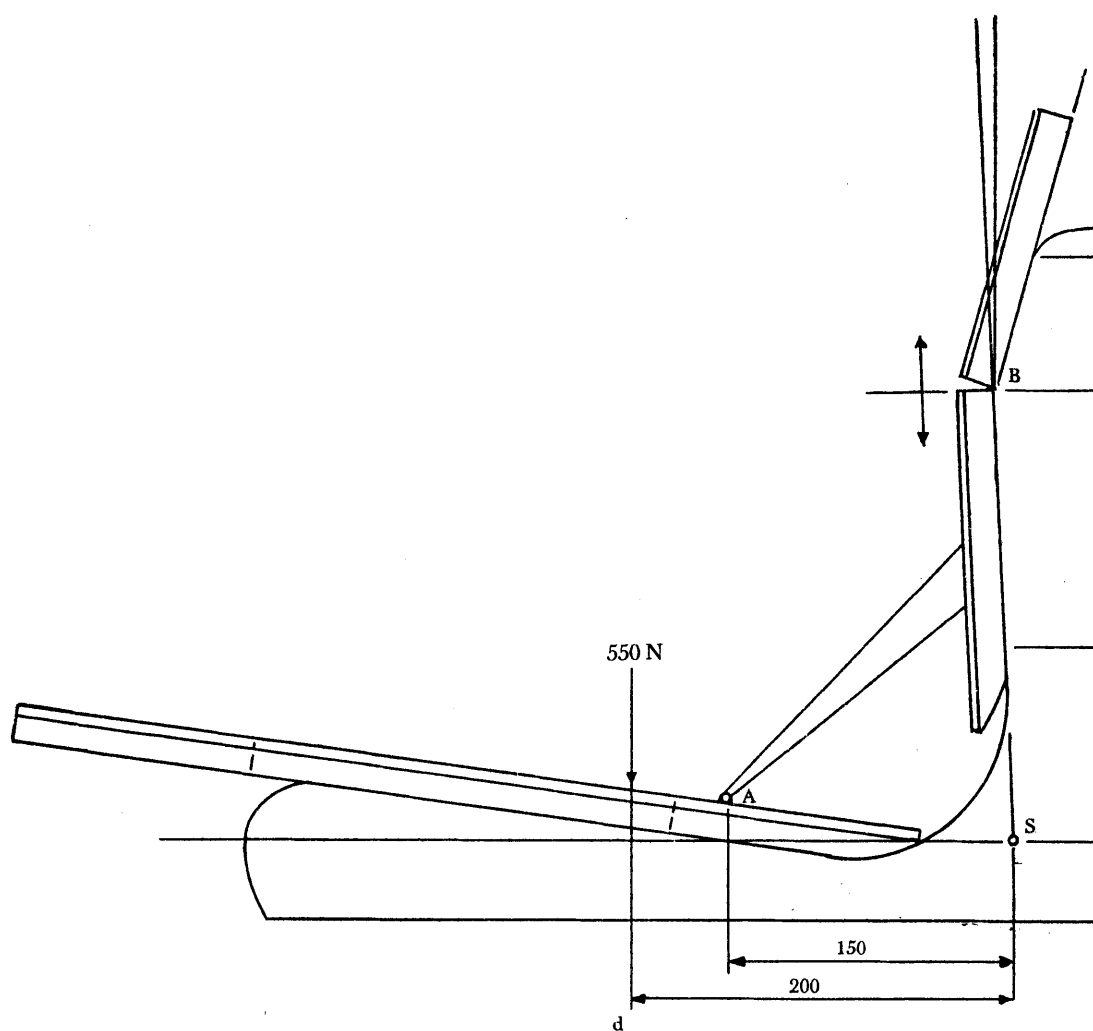


Figure 1

Device for determining the seat reference point



(Dimensions in millimetres)

*Figure 2*

**Method of determining the seat reference point.**

## COUNCIL DIRECTIVE

of 29 March 1977

on biological screening of the population for lead

(77/312/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament<sup>(1)</sup>,

Having regard to the opinion of the Economic and Social Committee<sup>(2)</sup>,

Whereas one of the essential tasks of the European Economic Community is to promote throughout the Community a harmonious development of economic activities and a continuous and balanced expansion, neither of which can be achieved without combating pollution and nuisances and improving the quality of life and the protection of the environment;

Whereas the various uses of lead are at present causing contamination of many areas of the environment by this substance;

Whereas the many environmental sources of lead make it difficult to determine the total exposure of any one individual to this pollutant and therefore the protection of human health calls for the most accurate possible monitoring of the individual's total lead absorption;

Whereas biological screening of the population for lead should be carried out and the results of this screening evaluated so that, where appropriate, new proposals may be drawn up;

Whereas it is desirable to lay down the technical procedures and biological reference levels for such screening;

Whereas measurement of blood lead level is currently the best means of assessing the quantity of lead recently received by an individual as a result of exposure to environmental lead; whereas the enzymatic activity of delta-aminolevulinic acid dehydratase (ALAD) may be used as an indicative or supplementary test for determining exposure to lead;

Whereas the programme of action of the European Communities on the environment<sup>(3)</sup> provides for the coordination of national programmes having as their aim the improvement of the quality of life and for priority investigation into lead,

HAS ADOPTED THIS DIRECTIVE:

*Article 1*

The Member States shall take the necessary steps to apply a common procedure for biological screening in order to assess the exposure of the population to lead outside the working environment.

*Article 2*

This common procedure, the application of which shall be restricted to four years, shall be based on the measurement of blood lead levels.

As an indicative or supplementary test, the ALAD measurement may also be used in accordance with the procedures laid down in Annexes II and III.

<sup>(1)</sup> OJ No C 28, 9. 2. 1976, p. 31.

<sup>(2)</sup> OJ No C 50, 4. 3. 1976, p. 9.

<sup>(3)</sup> OJ No C 112, 20. 12. 1973, p. 3.

*Article 3*

1. The conditions for biological screening shall be fixed by means of:
  - sampling and analysis procedures,
  - frequency of sampling.
2. Blood sampling shall be carried out on volunteers.

*Article 4*

Sampling shall be carried out on:

- groups of at least 100 persons in urban areas with more than 500 000 inhabitants,
- groups of at least 100 persons, in so far as this is feasible, chosen from among people exposed to significant sources of lead pollution,
- critical groups determined by the competent authorities in the Member States.

In each Member State and during each campaign the number of analyses to be performed shall be 50 or more per million inhabitants.

*Article 5*

The sampling of the groups referred to in Article 4 shall be carried out during at least two campaigns in each area investigated during the period of operation of the programme, separated by at least 24 months. In the second campaign, samples shall not necessarily be taken from the same persons as in the first campaign.

*Article 6*

In assessing the results of the biological screening for the purposes of the action provided for in Article 8, the following blood lead levels, which take into account the relationships between dose and effect given in Annex I, shall be taken together as reference levels:

- a maximum of 20  $\mu\text{g}$  of Pb/100 ml of blood for 50% of the group of people examined,
- a maximum of 30  $\mu\text{g}$  of Pb/100 ml of blood for 90% of the group of people examined,
- a maximum of 35  $\mu\text{g}$  of Pb/100 ml of blood for 98% of the group of people examined.

*Article 7*

Blood lead levels shall be determined as follows:

- Member States shall inform the Commission of the names of the laboratories taking part in the biological screening programme and of the methods of analysis used,
- the Commission, in conjunction with the Member States, shall organize inter-comparison programmes in which the abovementioned laboratories shall participate,
- the Commission, in conjunction with the Member States, shall examine the results of these programmes with a view to improving the comparability of the methods of analysis.

*Article 8*

Where the results of the analyses indicate that the reference levels set out in Article 6 have been exceeded in one or more cases Member States shall:

- check the validity of the results,
- take action to trace the exposure sources responsible for the levels being exceeded; this shall also include action on all individuals with a blood lead level over 35  $\mu\text{g}/100\text{ ml}$ ,
- take all appropriate measures at the discretion of their competent national authorities.

*Article 9*

1. Within six months of notification of this Directive, the Member States shall designate the competent national authorities which shall forward to the Commission:

- the data relating to the biological screening of the population groups referred to in Article 4, together with details of the methods of analysis, the population groups examined and the areas in which samples have been taken; complete anonymity shall be preserved as regards the persons examined; the Commission and the Member States shall agree on the procedures and the method whereby these data shall be forwarded,
- information on the causes or factors presumed to have resulted in the reference levels in Article 6 being exceeded.

2. The competent national authority shall also notify the Commission of the measures taken pursuant to the third indent of Article 8.

*Article 10*

At least twice a year the Commission shall convene a meeting of representatives of the Governments of the Member States, which shall, in particular:

- ensure that implementation of the biological screening and in particular of the provisions of Articles 4 and 5 is harmonized,
- see that the analyses carried out are comparable,
- examine the information and facilitate the exchange of information between the Member States on the results of the biological screening and on the measures taken pursuant to Article 8.

*Article 11*

On the basis of the information collected pursuant to Article 9, the Commission shall draw up in cooperation with the competent national authorities:

- a collated annual report on the implementation of the programme, which shall be forwarded to the Member States, the Council and the European Parliament,

- a general report at the end of the programme which will form the basis for drawing up any further proposals taking account of progress made in scientific and technical knowledge.

*Article 12*

Member States shall take the necessary measures to enable the procedure laid down by this Directive to enter into force within 12 months following its notification and shall immediately inform the Commission thereof.

*Article 13*

This Directive is addressed to the Member States.

Done at Brussels, 29 March 1977.

*For the Council*

*The President*

T. BENN

## ANNEX I

## RELATIONSHIPS BETWEEN DOSE AND EFFECT

The blood lead levels used in the assessment of the results of the biological screening are based on analysis of the scientific data concerning the various toxic effects of lead. With this analysis, which takes account of normal variations in biological values within the population, it is possible to establish quasi-quantitative relationships between dose and effect. The following relationships between dose and effect are used for references for the purposes of this Directive.

A decrease in ALAD activity in the red corpuscles as a result of exposure to lead may be tolerated for the population, provided that it does not interfere with haematopoiesis. For blood lead levels below 15 to 20  $\mu\text{g}/100\text{ ml}$ , a decrease in ALAD activity is not currently considered to interfere with haematopoiesis.

An increase in the protoporphyrin content of erythrocytes in the blood (PPE) indicates interference with the body's use of iron and thus with synthesis of the haem. An increase in PPE has been found at blood lead levels over 20 to 30  $\mu\text{g}/100\text{ ml}$ . An increase in PPE may however be due to other causes.

Interference with the glutathione synthesis may be tolerated only for a small fraction of the population and only if it is slight and does not result in any other sub-clinical symptoms. This unacceptable interference with glutathione synthesis is not found at blood lead levels below 30  $\mu\text{g}/100\text{ ml}$ .

A significant increase in the excretion of delta-aminolevulinic acid in the urine (ALAU) is a significant sign of disturbance in the metabolism of porphyrins and thus a sign of health impairment. A statistically significant increase in ALAU begins to be found at blood levels above 35  $\mu\text{g}/100\text{ ml}$ .

## ANNEX II

CORRESPONDENCE BETWEEN BLOOD LEAD LEVELS AND  
ENZYMATIC ACTIVITY

For the purposes of Article 2 of this Directive, the relationship between blood lead levels and ALAD enzymatic activity measured in accordance with the European standardized method (Annex III) shall be as follows:

| Blood lead level<br>( $\mu\text{g}/100\text{ ml}$ blood) | ALAD<br>(units/litre) |
|----------------------------------------------------------|-----------------------|
| 35                                                       | 20                    |
| 30                                                       | 25                    |
| 20                                                       | 35                    |

If the ALAD values measured are significantly higher than the above limits for the different sections of population, confirmatory blood lead measurements shall not be required.

## ANNEX III

## TECHNICAL INSTRUCTIONS FOR MEASURING ALAD ACTIVITY

European standardized method for determining the activity  
of delta-aminolevulinic acid dehydratase

The principle of the method adopted to determine the activity of delta-aminolevulinic acid dehydratase is well known. It is based on incubation of the enzyme with an excess of delta-aminolevulinic acid substrate. The porphobilinogen (PBG) which forms after a certain length of time is mixed with the modified Ehrlich reagent and the colour obtained is measured against white using a photometer. The quantity of porphobilinogen produced constitutes a measurement of ALAD activity.

## METHOD

## Effect of light

Recent experiments have shown that PBG in particular is very sensitive to light. The entire analysis should thus be conducted with no direct sunlight at all in the laboratory (and not simply excluded from the point at which the analysis is carried out).

*Phase one* — Blood sampling and preservation before analysis

- Take a sample of 2 ml venous blood using a plastic syringe (not lead stabilized) in the presence of dried heparin (< 5 mg).
- Prepare immediately and cool to 4 °C four samples of 0.2 ml placed in plastic tubes (not lead stabilized). Graduated Marbourg-type pipettes should be used.
- If the samples are analyzed within three hours, there is no need to chill them.
- Samples should not be preserved at 4 °C for longer than 24 hours.
- Just before analysis, all samples should be placed in a bath of iced water for 10 minutes.

*Note:* Plastics which may be used include, for example, polythene, polystyrene and polypropylene. The preservation period of 24 hours at 4 °C is a cautious estimate. This interval is long enough for the sample to be removed for analysis from the point at which it was taken to a central laboratory. Three of the four blood samples are used to measure ALAD and the fourth as a blank.

*Phase two* — Haematocrit reading

This reading must be taken:

- at the same time as the blood sample,
- by a capillary method using two samples.

The sample should be centrifuged, after closing one end of the tube, at a speed of at least 30 000 rev/minute and for not less than five minutes.

*Note:* This reading should preferably be taken at once, but in any case not later than 24 hours after the blood sample is taken. If possible a microhaematocrit centrifuge should be used.

*Phase three — Haemolysis*

- Take three blood samples which have been 'thawed' using 1.3 ml distilled water (preheated to 37 °C) and haemolyse for 10 minutes at  $37 \pm 0.2$  °C.
- Use, for preference, a 2 ml graduated pipette for adding the water and then mix thoroughly.
- Do not shake the samples at this stage.

*Note:* It has been decided that water should be used rather than Triton X 100 for the haemolysis. Haemolysis experiments using Triton X 100 resulted in a considerable slowing in ALAD activity which has not yet been accounted for and which might be an artifact.

*Phase four — Addition of the ALA solution to the haemolysate*

- Prepare the ALA solution.
- It should not be prepared more than five hours beforehand.
- Heat this solution to 37 °C for at least 10 minutes before adding it.
- Add 1 ml of this solution to the haemolysate, preferably using a 1 ml volumetric pipette, and mix.

*Note:* A pH value of 6.4 has been taken, since experiments have shown that it is at this pH that there is the best correlation between ALAD activity and blood lead level in normal populations. It is not necessary to obtain the maximum activity (which can be done by raising the pH), since the activities to be measured are already fairly high.

*Phase five — Preparation of the blank*

- Take 0.2 ml of blood treated as when measuring ALAD up to the point where the ALA solution is added; in place of this, add 1 ml of TCA-HgCl<sub>2</sub> solution, 1 ml of ALA solution, and then proceed as when measuring ALAD (see below).
- Add the solutions using volumetric pipettes.

*Note:* Only one blank is compared against a series of three tests for each blood sample. If the OD obtained for the blank is very high, the operation should be repeated to check it.

*Phase six — Incubation*

- 60 minutes at  $37 \pm 0.2$  °C in a water bath.
- Incubation time runs from addition of the ALA solution.

*Note:* The incubation period of 60 minutes was chosen in order to increase ALAD activity by natural means, given that no other phase leads to any artificial increase in activity. Experiments have shown that the incubation time/activity ratio is linear for intervals over two hours.

The incubation temperature has been kept at 37 °C for practical reasons.

*Phase seven — Halting the PBG reaction*

- Add 1 ml of TCA-HgCl<sub>2</sub> solution to the incubation mixture, preferably using a 1 ml volumetric pipette.

*Phase eight — Centrifugation and filtration*

- 30 000 rev/minute.
- Filtration using Whatman No 54 paper or equivalent (acid-resistant).

*Note:* Centrifugation should last about 10 minutes. The filtration phase is included in order to avoid the transfer by pipette of small particles on to the surface of the supernatant liquid. These particles seem to produce a colour reaction with Ehrlich's reagent. A number of tests have shown that inclusion of the filtration phase leads to better reproducibility. This phase can if necessary be replaced by a second centrifugation.

*Phase nine* — Reaction with Ehrlich's reagent

- Mix 1 ml supernatant liquid with 1 ml modified Ehrlich's reagent, using a 1 ml volumetric pipette.
- Use a Vortex-type mixer to ensure that the mixture is homogeneous.
- Allow the reaction to continue for five minutes before measuring extinction.

*Note:* To obtain a homogeneous mixture it is very important to ensure that the filtered supernatant liquid is well mixed with the Ehrlich's reagent.

*Phase ten* — Extinction measurement

- Calibrate the spectrophotometer using a phenolphthaline solution in a basic buffer.
- Compare the extinction measurement of the sample with that of the blank at 555 nm in a 1 cm cell (or 2 cm if the absorption is very low).

*Phase eleven* — Calculation of enzyme activity

- The equation for calculating enzyme activity is as follows:

$$\frac{\text{OD corr.} \times 35 \times 2 \times 100 \times K}{\text{Hct\%} \times 60 \times 62} = \mu\text{moles ALA/mn/ml RBC} = \text{U/ml}$$

where:

- OD = extinction measured,
- 60 = incubation time,
- 35 = dilution factor,
- 62 = molal extinction coefficient in  $\text{cm}^2/\mu\text{mol}$ ,
- K = spectrophotometric correction coefficient.

*Note:* The units proposed are consistent with the recommendations of the International Union of Biochemistry on enzyme nomenclature.

## SOLUTIONS

### 1. Preparation of an ALA solution

*Solution A:*

1.78 g  $\text{Na}_2\text{HPO}_4 \cdot 2\text{H}_2\text{O}$  dissolved in 100 ml distilled water (preferably deionized).

*Solution B:*

1.38 g  $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$  dissolved in 100 ml distilled water.

29 ml of solution A + 71 ml of solution B give a buffer of 0.1 M sodium phosphate at pH 6.4.

This buffer strength is necessary to prevent any fluctuation of pH value in the solution undergoing the reaction.

167.6 mg ALA-HCl are dissolved in solution B (which must always be acid); the pH is adjusted to 6.4 on the basis of solution A. The volume is then made up to 100 ml using the buffer solution of 0.1 M sodium phosphate at pH 6.4. This preparation gives a solution of 0.01 M ALA.

## 2. TCA-HgCl<sub>2</sub> solution

1.35 g HgCl<sub>2</sub> are dissolved in 100 ml 10 % trichloroacetic acid.

## 3. Ehrlich's reagent solution

### *Reagents:*

2.5 g *p*-dimethylaminobenzaldehyde (pDMAB),  
0.25 g HgCl<sub>2</sub> dissolved in 10 ml glacial acetic acid,  
perchloric acid SG 1.7,  
glacial acetic acid.

### *Preparation:*

Dissolve the pDMAB in 50 ml acetic acid. Add 24.5 ml perchloric acid and 4 ml HgCl<sub>2</sub> solution. Mix, cool and make up to 100 ml with the glacial acetic acid in a graduated flask <sup>(1)</sup>. Store in a dark bottle.

### *Calibration:*

Community-level calibration should be carried out every year by a laboratory jointly appointed by the Member States.

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<sup>(1)</sup> If a brown coloration appears at this point, the reagent should be discarded.

**COUNCIL DIRECTIVE**  
**of 5 April 1977**  
**on the approximation of the laws of the Member States relating to measuring systems for liquids**  
**other than water**

(77/313/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament<sup>(1)</sup>,

Having regard to the opinion of the Economic and Social Committee<sup>(2)</sup>,

Whereas in each Member State the construction and methods of control of measuring systems for liquids are subject to mandatory provisions which differ from one Member State to another and consequently hinder trade in such systems; whereas it is therefore necessary to approximate these provisions;

Whereas Council Directive 71/316/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to common provisions for both measuring instruments and methods of metrological control<sup>(3)</sup>, as last amended by Directive 72/427/EEC<sup>(4)</sup>, has laid down the EEC pattern approval and EEC initial verification procedure for measuring instruments; whereas, in accordance with that Directive, the technical requirements for the design and functioning of measuring systems for liquids other than water should be laid down;

Whereas Council Directive 71/319/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to meters for liquids other than water<sup>(5)</sup> and Coun-

cil Directive 71/348/EEC of 12 October 1971 on the approximation of the laws of the Member States relating to ancillary equipment for meters for liquids other than water<sup>(6)</sup> have already laid down the technical design and operational requirements which such meters must satisfy; whereas it is specified in Directive 71/319/EEC that measuring systems including one or more meters for liquids other than water must be the subject of a separate Directive,

HAS ADOPTED THIS DIRECTIVE:

*Article 1*

This Directive shall apply to measuring systems for liquids other than water incorporating volumetric meters in which the liquid causes the movement of mobile walls of measuring chambers.

*Article 2*

Those measuring systems which may bear EEC signs and marks are described in the Annex hereto. They shall be subject to EEC pattern approval if the provisions of the Annex so require and shall undergo EEC initial verification under the conditions laid down in the Annex hereto.

Under the conditions laid down in the Annex, EEC pattern approval may also be granted to measuring system components and sub-assemblies.

*Article 3*

No Member State may, on the grounds of their metrological properties, refuse, prohibit or restrict the placing on the market or the use of measuring systems for liquids

<sup>(1)</sup> OJ No C 125, 8. 6. 1976, p. 43.

<sup>(2)</sup> OJ No C 131, 12. 6. 1976, p. 53.

<sup>(3)</sup> OJ No L 202, 6. 9. 1971, p. 1.

<sup>(4)</sup> OJ No L 291, 28. 12. 1972, p. 156.

<sup>(5)</sup> OJ No L 202, 6. 9. 1971, p. 32.

<sup>(6)</sup> OJ No L 239, 25. 10. 1971, p. 9.

other than water bearing the signs and marks provided for in this Directive as specified by Directive 71/316/EEC.

No Member State may, on grounds of their metrological properties, refuse, prohibit or restrict the placing on the market of measuring system components and sub-assemblies bearing the EEC pattern approval sign.

*Article 4*

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within 18 months of its notification and shall forthwith inform the Commission thereof.

2. Member States shall communicate to the Commission the text of the provisions of national law which they adopt in the field covered by this Directive.

*Article 5*

This Directive is addressed to the Member States.

Done at Luxembourg, 5 April 1977.

*For the Council*

*The President*

D. OWEN

## ANNEX

## 1. GENERAL REQUIREMENTS FOR MEASURING SYSTEMS

## 1.1. Definitions

1.1.1. *Measuring system*

A measuring system for liquids other than water comprises, in addition to the meter itself conforming to Directive 71/319/EEC and the ancillary equipment conforming to Directive 71/348/EEC which may be associated with it, all the equipment to ensure correct measuring or intended to facilitate the operation and all other equipment which can affect measuring in any possible way.

If several meters intended for separate measuring operations operate in conjunction with common components, each meter shall be considered as comprising, with the common components, a measuring system.

If several meters are intended for a single measuring operation, the meters are considered as forming a single measuring system.

1.1.2. *Minimum delivery*

The minimum delivery of a measuring system is determined in conformity with the requirements of Directives 71/319/EEC and 71/348/EEC, having regard to the provisions of this Directive.

In measuring systems intended to measure liquid received into the system, the smallest volume of liquid for which measurement shall be authorized is called minimum reception. The preceding requirement relating to minimum delivery applies, by analogy, to minimum reception.

1.1.3. *Gas separator*

A gas separator is an apparatus for continuously separating and removing by an appropriate device any air or gases contained in the liquid.

The gas evacuation device is, in principle, automatic in operation. However, this requirement shall be waived if there is a mechanism which automatically stops the flow of liquid if there is a risk of air or gas entering the meter. In this case, resumption of measurement shall be possible only when the air or gas has been removed, either automatically or manually.

1.1.4. *Gas extractor*

A gas extractor is an apparatus designed to extract air or gases accumulated in the pipework upstream of the meter in the form of pockets no more than slightly mixed with the liquid.

The above requirements concerning the gas evacuation device for the gas separator shall also apply to that of the gas extractor.

1.1.5. *Special gas extractor*

A special gas extractor is an apparatus which, like the gas separator but under less stringent operating conditions, continuously separates any air or gases contained in the liquid, and automatically stops the flow of liquid if there is a risk of air or gases accumulated in the form of pockets no more than slightly mixed with the liquid, entering the meter.

1.1.6. *Condenser tray*

A condenser tray is a closed tank designed to collect, in pressurized liquefied gas measuring systems, the gases contained in the liquid to be measured and to condense them before measuring.

1.1.7. *Gas indicator*

A gas indicator is a device allowing easy detection of any air or gas bubbles which may be present in the liquid flow.

1.1.8. *Sight-glass*

A sight-glass is a device for checking that all or part of the measuring system is completely full of liquid.

1.2. *Scope*

The general requirements of section 1 shall apply to all types of measuring systems unless otherwise specified in section 2.

1.3. *Meters, flowrate limits*

Meters incorporated in a measuring system, including any ancillary equipment, shall be of an EEC pattern approved for measuring the liquid concerned under normal operating conditions.

These meters shall be subject to separate EEC pattern approval or to approval included in the EEC pattern approval of the measuring system in which they are incorporated. The flowrate limits (maximum and minimum flowrates) of a measuring system may differ from those of the meter fitted to it. In such cases it should be checked that the maximum and minimum flowrates of the measuring system are compatible with those of the meter. Even where a meter has been approved as a component incorporated in a measuring system, it must in all instances comply with the requirements of Directive 71/319/EEC. Where a number of meters are mounted in parallel on a single measuring system, the sum of the maximum and minimum flowrates of the various meters shall, with the exception of the specific instances laid down in this Annex, be taken into account in determining the flowrate limits of the measuring system. The maximum flowrate of the measuring system must be at least twice the total minimum flowrate of its meter or meters.

1.4. *Point of transfer*

1.4.1. Measuring systems shall incorporate a point defining the quantity of liquid delivered or received and called the point of transfer. This point of transfer is situated downstream of the meter in delivery systems, upstream of the meter in receiving systems.

1.4.2. Measuring systems may be of two types: 'empty-hose' systems and 'full-hose' systems; the term 'hose' includes rigid pipework.

1.4.2.1. Empty-hose systems are, in the case of delivery equipment, measuring systems in which the point of transfer is situated upstream of a delivery hose. This point of transfer takes the form of either a weir-type sight-glass or a closing device, combined, in both cases, with a system which ensures the emptying of the delivery hose after each measuring operation.

1.4.2.2. Full-hose measuring systems are, in the case of delivery equipment, measuring systems whose point of transfer consists of a closing device situated in the delivery pipework. Where the pipework has a free end, the closing device shall be situated as close as possible to this end.

1.4.2.3. In the case of receiving equipment, the same requirements apply by analogy to the reception pipework upstream of the meter.

**1.5. Filters**

Measuring systems shall incorporate a device upstream of the meters, intended to collect solid impurities from the liquids (filter). Filters shall as far as possible be so arranged as to be easily accessible.

**1.6. Elimination of air or gases****1.6.1. General requirement**

Measuring systems shall be installed in such a way that they do not normally produce, upstream of the meter, entry of air or release of gas into the liquid. If there is a risk that this requirement might not be met, measuring systems shall incorporate gas-eliminating equipment permitting the proper elimination of any air or undissolved gases which may be contained in the liquid before it passes through the meter.

The gas-eliminating equipment shall be suitable for the supply conditions and be arranged in such a way that the additional error due to the influence of the air and gases on the measuring results shall not exceed:

- 0.5% of the quantity measured for liquids other than potable liquids of a viscosity not exceeding 1 mPa·s,
- 1% of the quantity measured for potable liquids and those whose viscosity exceeds 1 mPa·s.

However, there shall be no need for the error to be less than 1% of the minimum delivery.

**1.6.2. Pumped flow**

1.6.2.1. Subject to 1.6.6, when the pressure at the pump intake may, even momentarily, fall below atmospheric pressure or the saturated vapour pressure of the liquid, a gas separator shall be provided.

1.6.2.1.1. A gas separator intended to operate at a maximum flowrate not exceeding 100 m<sup>3</sup>/h may be subject either to separate EEC pattern approval or to approval included in the EEC pattern approval of the measuring system of which it forms part, where this Annex provides for approval of such a system. However, as regards gas separators designed to operate at a maximum flowrate exceeding 100 m<sup>3</sup>/h, pattern approval may be granted by analogy with an approved pattern of the same design and smaller dimensions. Gas separators which have received separate EEC pattern approval may be used in measuring systems without gas indicators.

1.6.2.1.2. The gas separator shall in principle be installed downstream of the pump. It may, however, be combined with the pump.

It shall always be positioned as close as possible to the meter so that the pressure drop due to the flow of liquid between the two components is negligible.

1.6.2.1.3. The operational limits of a gas separator shall be as follows:

- (a) the maximum flowrate or flowrates for one or more specified liquids;
- (b) the maximum and minimum pressure limits compatible with proper functioning of the gas eliminating device.

1.6.2.1.4. Where a gas separator intended to operate at a maximum flowrate not exceeding 100 m<sup>3</sup>/h is covered by a separate EEC pattern approval, it shall, within the error limits laid down in 1.6.1, ensure the elimination of air or gases mixed with the liquid to be measured, under the following test conditions:

- (a) the measuring system shall operate at its maximum flowrate and the minimum pressure laid down for the gas separator;
- (b) any proportion by volume of air or gases relative to the liquid is permissible if the gas separator is designed for a maximum flowrate lower than or equal to 20 m<sup>3</sup>/h; it shall be limited to 30% if the gas separator is designed for a maximum flowrate higher than

20 m<sup>3</sup>/h. (Air or gases shall be measured at atmospheric pressure to determine their percentage.)

In addition, the automatic gas removal device shall continue to operate properly at the maximum pressure laid down for gas separators.

- 1.6.2.1.5. Where a gas separator is approved as a component incorporated in an approved measuring system, the requirements of 1.6.2.1.4 may be applied to it. In this case, a gas indicator is not necessary.

Where the measuring system incorporates a gas indicator conforming to the definition in 1.1.7, the gas separator shall, within the error limits laid down in 1.6.1, ensure the elimination of air or gases mixed with the liquid to be measured, under the following conditions:

- (a) the measuring system shall operate at its maximum flowrate and minimum pressure;
- (b) the proportion by volume of air or gases relative to the liquid shall not exceed:
  - 20% for liquids other than potable liquids of a viscosity not exceeding 1 mPa·s,
  - 10% for potable liquids and for other liquids of a viscosity which is in excess of 1 mPa·s<sup>(1)</sup>.

Where the proportion by volume of air or gases relative to the liquid exceeds the above percentages and the gas separator fails to meet the requirements in respect of maximum permissible errors, gas or air bubbles must be clearly visible in the gas indicator.

- 1.6.2.2. When the pressure at the pump inlet is constantly greater than the atmospheric pressure and the saturated vapour pressure of the liquid, and there is no gas separator, a gas extractor or special gas extractor shall be necessary if gaseous formations are liable to occur between the pump and the meter during non-flow periods or if air pockets can be introduced into the pipework (e.g. when the supply tank is completely empty) in such a manner as to produce a specific error in excess of 1% of the minimum delivery.

- 1.6.2.2.1. The gas extractor or special gas extractor intended to operate at a maximum flowrate not exceeding 100 m<sup>3</sup>/h may be subject either to separate EEC pattern approval or approval included in the EEC pattern approval of the measuring system of which it forms part, if the present Annex makes provision for approval of the system.

However, as regards gas extractors intended to operate at a maximum flowrate in excess of 100 m<sup>3</sup>/h, pattern approval may be granted by analogy with an approved pattern of the same design and with smaller dimensions.

Gas extractors and special gas extractors which have been granted separate EEC pattern approval may be used in measuring systems without gas indicators.

- 1.6.2.2.2. The gas extractor or special gas extractor shall in principle be installed downstream of the pump. However, it may also be combined with the pump.

In both cases, it shall normally be installed at the highest point in the pipework, as close as possible to the meter and upstream of it. If it is installed below the level of the meter, a non-return device, fitted if necessary with a pressure limiting valve, shall be incorporated to prevent the pipes between the valve and the meter from emptying.

If the pipework upstream of the meter incorporates several high points, several gas extractors may be required.

- 1.6.2.2.3. The limits of operation of a gas extractor or special gas extractor are as defined for gas separators in 1.6.2.1.3 including the minimum delivery for which such devices are provided.

<sup>(1)</sup> Experience shows that the requirement referred to in subparagraphs (a) and (b) is generally met by a properly built separator if its effective volume is at least equal to 8% of the volume delivered in one minute at the maximum flowrate indicated on the plate of the measuring system.

- 1.6.2.2.4. A gas extractor or special gas extractor shall, at the maximum flowrate of the measuring system, ensure the elimination of a gas or air pocket, measured under atmospheric pressure, of a volume at least equal to the minimum delivery without an additional error greater than 1% of the minimum delivery. Moreover, a special gas extractor shall also be capable of separating continuously a volume of gas or air equal to 5% of the volume of the liquid delivered at the maximum flowrate without the resulting additional error exceeding the limits fixed in 1.6.1.
- 1.6.2.3. The requirements of 1.6.2.1 and 1.6.2.2 shall not prohibit the existence of manual or automatic extraction devices in fixed installations of large dimensions.
- 1.6.2.4. If the supply of the liquid is so arranged that, whatever the conditions of use, no gas or air can form in or penetrate into the reception pipework upstream of the meter during measurement, no gas elimination device is required, provided that any gaseous formation liable to occur during non-flow periods does not cause a specific error in excess of 1% of the minimum delivery.
- 1.6.3. *Non-pumped flow*
- 1.6.3.1. In cases where the meter is supplied by gravity, without use of a pump, if the pressure of the liquid in all parts of the pipework upstream of the meter and in the meter itself is greater than the saturated vapour pressure and atmospheric pressure, a gas eliminator shall not be necessary. However, after the measuring system has been put into service, an arrangement is required to ensure that it remains correctly filled.
- 1.6.3.2. If the pressure of the liquid is likely to be less than atmospheric pressure while remaining greater than the saturated vapour pressure, the introduction of air into the meter shall be prevented by means of an appropriate device.
- 1.6.3.3. Where the meter is supplied under gas pressure, the entry of gas into the meter shall be prevented by means of an appropriate device.
- 1.6.3.4. In all circumstances the pressure of the liquid between the meter and the point of transfer shall be higher than the saturated vapour pressure of the liquid.
- 1.6.4. *Gas removal*
- The gas removal pipe of a gas eliminator shall not include a manually controlled valve if closure of this valve prevents the operation of the gas eliminator. If, however, a closing device of this kind is required for safety reasons, it must be possible to ensure its maintenance in the open position by means of a sealing device.
- 1.6.5. *Anti-swirl device*
- If it is intended as a general rule that the supply tank of a measuring system be completely emptied, the outlet orifice of the tank shall be provided with an anti-swirl device, except where the system incorporates a gas separator.
- 1.6.6. *Viscous liquid*
- As the effectiveness of gas separators and gas extractors decreases with an increase in the viscosity of the liquid, these devices need not be fitted in the case of liquids with a dynamic viscosity of more than 20 mPa·s at 20 °C. The pump shall be so arranged that the inlet pressure is always greater than the atmospheric pressure. If this condition is unlikely to be fulfilled on all occasions, a device shall be fitted to stop the flow of the liquid automatically as soon as the inlet pressure falls below the atmospheric pressure. A manometer shall be used to monitor this pressure. These conditions are not necessary if the measuring system incorporates devices ensuring that no air can be introduced through the joints in the sections of pipework subjected to reduced pressure.
- When the measuring system is not in use, the pipework shall be kept full of liquid up to the point of transfer.

**1.7. Gas indicator**

- 1.7.1. Measuring systems may be fitted with a gas indicator. Such devices may be made mandatory in the cases specified in section 2.
- 1.7.2. The gas indicator shall be so designed as to provide a satisfactory indication of the presence of gas or air in the liquid.
- 1.7.3. The gas indicator shall be installed downstream of the meter.
- 1.7.4. In empty-hose measuring systems the gas indicator may take the form of a weir-type sight-glass and may also be used as a point of transfer.
- 1.7.5. The gas indicator may be provided with a bleed screw or some other blow-off device when it forms a high point in the pipework. No pipe shall be connected to the blow-off device. Flow indicators (e.g. spinners) may be incorporated in the gas indicator, provided that such devices do not prevent any gaseous formations which may be present in the liquid from being visible.

**1.8. Complete filling of the measuring system**

- 1.8.1. The meter and the pipework from the meter to the point of transfer shall automatically be kept full of liquid during the measuring operation and when the system is not in use.
- If this condition is not fulfilled, particularly in cases where the installation is fixed, it must be possible for the complete filling of the measuring system up to the point of transfer to be effected manually and monitored during measurement, and when the system is not being used. To ensure the complete elimination of air and gas from the measuring system, blow-off devices, if possible with small windows, shall be placed at appropriate positions.
- 1.8.2. The pipework between the meter and the point of transfer shall not, in general, by variations in temperature, induce additional errors of more than 1% of the minimum delivery.
- Section 2 shall specify the technical conditions to be fulfilled in certain special cases in order that this requirement may be met.
- 1.8.3. If necessary, a pressure maintaining device shall be installed downstream of the meter to ensure that the pressure in the gas eliminators and in the meter is always greater than the atmospheric pressure and the saturated vapour pressure of the liquid.
- 1.8.4. Measuring systems in which there is a possibility of the liquid flowing in the direction opposite to that of normal flow when the pump has stopped, shall be provided with a non-return valve, fitted with a pressure-limiting device if necessary.
- 1.8.5. In empty-hose measuring systems the pipework downstream from the meter and, if necessary, the pipework upstream of the meter shall have a high point so that all parts of the measuring systems remain constantly filled. Draining of the delivery hose referred to in 1.4.2.1 shall be assured by an air vent. In certain cases this air vent may be replaced by special devices such as an auxiliary pump or a compressed-gas injector. In measuring systems designed for minimum deliveries of less than 10 m<sup>3</sup>, such devices shall operate automatically.
- 1.8.6. In full-hose measuring systems the free end of the hose shall incorporate a device to ensure that the hose cannot be emptied during periods when the system is not used. This requirement need not apply to liquefied gas.

When a closing device is placed downstream of this device, the volume of the space between them shall be as small as possible and in any case less than the maximum permissible error for the minimum delivery of the measuring system.

In the case of systems intended for measuring viscous liquids, the end of the nozzle shall be so designed that it cannot retain a quantity of liquid exceeding 0.4 times the maximum permissible error for the minimum delivery of the measuring system.

- 1.8.7. If the hose comprises several components, these shall be assembled either by means of a special connector to keep the hose full or by a connection system which is either sealed or ensures that the components are virtually impossible to separate without a special tool.

1.9. **Variation of internal volume of full hoses**

In the case of full hoses in a measuring system provided with a hose reel, the increase in internal volume due to the change from the coiled position, when not subjected to pressure, to the uncoiled position, when subjected to pressure without any flow of liquid, shall not be more than twice the maximum permissible error for the minimum delivery.

If the measuring system is not provided with a hose reel, the internal volume increase shall not exceed the maximum permissible error for the minimum delivery.

1.10. **Branches**

- 1.10.1. In measuring systems which are intended to deliver liquids, branches downstream of the meter shall only be permitted if they are so arranged as to ensure that the liquid is discharged from a single outlet at a time. In measuring systems intended to receive liquids, branches upstream of the meter are permitted only if they are so arranged that the intake of liquid is effected through a single pipe at a time.

Departures from these requirements may only be approved in the case of delivery systems which are specifically installed to supply only one user at a time, and receiving systems which cannot operate for more than one supplier at a time.

- 1.10.2. In measuring systems operating either with an empty hose or a full hose and having flexible pipes, a non-return valve shall if necessary be incorporated in the rigid pipework leading to the full hose immediately downstream from the selector valve. In addition the selector valve shall not in any position permit connection of the discharge hose, operating as an empty hose, to the pipework leading to the full hose.

1.11. **By-passes**

Any connections intended for by-passing the meter shall be closed by means of blanking flanges. However, if the operating requirements make such a by-pass necessary, it shall be closed either by means of a closing disc or by means of a double closing device with a monitoring valve in-between. It must be possible to ensure closure by means of seals.

1.12. **Valves and control mechanisms**

- 1.12.1. If there is a risk that the supply conditions might lead to the meter becoming overloaded, a flow-limiting device shall be provided. This device shall be placed downstream of the meter if it causes a pressure loss. It must be possible to seal it.

- 1.12.2. The various positions for the operating components of multi-way valves shall be easily visible and located by notches, stops or other fixing devices. Departures from this requirement are permissible whenever the adjacent positions of the operating handle form an angle of 90° or over.

- 1.12.3. Retaining valves and closure mechanisms not used to define the quantity measured must, if necessary, have relief valves in order to dissipate any abnormally high pressures which may arise in the measuring system.

**1.13. Layout of measuring systems**

Measuring systems shall be installed in such a manner that the indicating device is clearly visible under normal conditions of use. The indicating device and, if present, the gas indicator of the gas separator shall as far as possible be observable from one position. Sealing devices shall be easily accessible, plates shall be fixed irremovably and the statutory markings shall be clearly legible and indelible.

**1.14. On-site verification devices**

Verification of the installation, as provided for in 3.2 shall be possible. If necessary, pipework shall be provided to return the measured liquid to a storage tank. The installation shall, as necessary, be equipped with temperature and pressure tapings, especially when the operation or testing of the measuring systems requires a knowledge of these factors.

**1.15. Characteristics of a measuring system**

The characteristics of a measuring system are as follows:

- maximum and minimum flowrates,
- maximum operating pressure,
- if necessary, minimum operating pressure,
- the liquid or liquids to be measured and the limits of viscosity, kinematic or dynamic, where an indication of the nature of the liquids alone is not sufficient to determine their viscosity,
- minimum delivery,
- the temperature range in the case where the liquid can be measured at a temperature below  $-10^{\circ}\text{C}$  or above  $+50^{\circ}\text{C}$ .

**1.16. Markings**

A measuring system, component or sub-assembly which has been granted pattern approval must carry, in a legible and indelible manner, either on the dial of the indicating mechanism or on a special descriptive plate, the following information:

- (a) the EEC pattern approval sign;
- (b) the identification mark or name of the manufacturer;
- (c) the manufacturer's designation, if any;
- (d) the serial number and year of manufacture;
- (e) the characteristics of the measuring system as defined in 1.15;
- (f) any supplementary information specified in the pattern approval certificate.

If several meters operate in a single system with the use of common components, the markings required for each part of the system may be combined on a single plate.

The markings on the dial of the indicating mechanism of the meter forming part of the measuring system must not contradict those on the descriptive plate of the measuring system.

If the measuring system can be transported without being dismantled the markings for each part may also be combined on a single plate.

**1.17. Seals**

Sealing shall preferably be carried out by lead stamping. However, certain seals applied with pincers shall be permitted on fragile instruments or where such seals are sufficiently protected against any danger of accidental breakage.

Seals must in all cases be easily accessible.

Sealing devices shall be provided on all parts of measuring systems which cannot be protected in any other way against operations which might affect accuracy of measurement. However, sealing devices need not be provided on connections which can only be dismantled by means of a tool.

The sealing devices shall be so designed as to enable the EEC partial initial verification mark to be affixed.

It shall be possible to seal the stamping-plate referred to in 3.3.2.1 of Annex II to Directive 71/316/EEC to a support of the measuring system. It may be combined with the descriptive plate on the measuring system referred to in 1.16.

In the case of a measuring system used for potable liquids, the seals shall not be affixed, so that the system can be dismantled for the purposes of cleaning.

## 2. SPECIAL REQUIREMENTS FOR DIFFERENT TYPES OF MEASURING SYSTEMS

### 2.1. Liquid-fuel measuring systems <sup>(1)</sup>

#### 2.1.1. Liquid-fuel measuring systems are measuring systems intended for the delivery of liquid fuel into the fuel tanks of road vehicles.

Measuring systems used for refuelling pleasure boats and small aircraft with liquid fuel shall be treated as liquid-fuel measuring systems.

They may include their own supply arrangement or be designed for installation in a central supply system.

The ratio between the maximum and minimum flowrates of these systems shall be at least 10 : 1.

#### 2.1.2. Where the measuring system has its own supply arrangement, a gas separator shall, if possible, be installed immediately upstream of the meter inlet.

This gas separator shall meet the requirements of 1.6.2.1.4 or 1.6.2.1.5 <sup>(2)</sup>.

In this latter case, no blow-off device as referred to in 1.7.5 shall be permitted.

#### 2.1.3. Where the measuring system is designed for installation in a central supply system or for refuelling at a distance, the general rules of 1.6 shall be applied.

#### 2.1.4. Liquid-fuel measuring systems shall be fitted with a device for resetting the volume indicator to zero in accordance with 1.1, 1.2, 1.3 and 1.5 of the Annex to Directive 71/348/EEC, as well as a volume totalizer.

Where these systems also incorporate a price indicator, the indicator shall be fitted with a device for resetting it to zero.

Devices for resetting the price indicator and volume indicator to zero shall be incorporated in such a way that the resetting of either of these indicators to zero automatically resets the other to zero.

<sup>(1)</sup> Additional provisions will be added later concerning liquid-fuel measuring systems incorporating:

- motor-fuel blending meters,
- motor-fuel and lubricant blending meters,
- electric or electronic indicators and ancillary devices,
- self-service devices, and
- measuring systems intended for the supply of liquefied gas.

<sup>(2)</sup> In the case of separators which comply with 1.6.2.1.5, experience shows that the requirement is generally met if the effective volume of the separator is at least 5% of the volume supplied in one minute at the maximum flowrate indicated on the meter plate.

- 2.1.5. Where the liquid-fuel measuring system has its own supply arrangement operated by an electric motor, a device shall be fitted which, after the motor has stopped, prevents any further delivery of the liquid until the indicator has been reset to zero.
- Under no circumstances shall resetting to zero be possible during delivery.
- 2.1.6. The non-return device referred to in 1.8.4 shall be mandatory. It shall be installed between the gas eliminator and the meter. However it may be placed immediately downstream of the meter if the gas eliminator is installed above the level of the meter. In this case, it may be combined with the device provided for in 1.8.3. Where the non-return device is installed between the gas eliminator and the meter, the resulting pressure loss must be low enough to be considered negligible.
- 2.1.7. The hoses on full-hose measuring systems shall incorporate a manual closure mechanism which meets the requirements of 1.8.6. An automatic closure mechanism may also be incorporated.
- Full-hose measuring systems supplied solely by means of a hand-operated pump, need only incorporate the closure mechanism referred to in 1.8.6.
- 2.1.8. Measuring systems with a maximum flowrate of 60 litres/minute or less must have a minimum delivery not exceeding five litres.
- 2.1.9. Where the meter is fitted with a ticket-printer, the ticket-printing device must be connected to the device which resets the volume indicator to zero. This arrangement must enable the ticket to be checked after printing by comparison with the indication shown.
- 2.1.10. In accordance with 3.2, initial verification of liquid-fuel measuring systems shall be carried out in one or two stages depending on whether or not they have their own supply system.
- 2.2. **Measuring systems fitted to road tankers for the transport and delivery of liquids with low viscosity (viscosity  $\leq 20$  mPa·s) stored at atmospheric pressure, except for potable liquids**
- 2.2.1. The requirements of 2.2 shall apply to measuring systems fitted to road tankers or transportable tanks.
- Measuring systems may be installed on road tankers containing one or more compartments, in which case each compartment shall be fitted with its own closure valve (manual or automatic).
- 2.2.2. In accordance with national rules on use, if any, each measuring system shall be used for a specified product or for a category of products for which the meter has been granted EEC pattern approval.
- The pipework shall be so designed that the mixing of products in the measuring system is easily prevented.
- 2.2.3. Where tanks are fitted to trailers or semi-trailers, the measuring systems may be affixed either to the tractor or to the trailer or semi-trailer.
- 2.2.4. A measuring system fitted to a road tanker may be of the empty-hose or full-hose type. It may also have either one empty hose and one full hose or two full hoses of different dimensions arranged so as to operate alternately.
- Change-over shall not be possible during a measuring operation.
- 2.2.5. Where the meter is fitted with a ticket-printer, the printing of the ticket shall be coupled with the resetting to zero of the volume indicator.
- 2.2.6. A measuring system fitted to a road tanker may be designed to operate solely by pump, solely by gravity, either by pump or by gravity, or by gas pressure.

- 2.2.6.1. Measuring systems supplied solely by pump may operate as full-hose or as empty-hose systems.
- 2.2.6.1.1. If there is a risk that the condition in 1.6.2.4 may not be met, the meter shall be preceded by a gas eliminator such as:
- (a) a suitable gas separator, which shall meet the requirements of 1.6.2.1.4 or 1.6.2.1.5<sup>(1)</sup>;
  - (b) a gas extractor;
  - (c) a special gas extractor.
- Where the meter outlet pressure in the measuring system may fall below the atmospheric pressure but remain higher than the saturated vapour pressure of the liquid measured, these devices shall be combined with an automatic mechanism to slow down and stop the flow, in order to prevent any air passing into the meter.
- If there is no risk of the meter outlet-pressure falling below the atmospheric pressure (which is the case, in particular, with systems operating only on full-hose) automatic mechanisms to slow down and stop the flow shall not be required.
- 2.2.6.1.2. The special gas extractor with an automatic stop device shall be fitted with a sight-glass in accordance with 1.1.8.
- 2.2.6.1.3. The compartments in road tankers shall be fitted with an anti-swirl device, except where the measuring system has a gas separator conforming to the requirements of 1.6.2.1.4.
- 2.2.6.2. Measuring systems operating solely by gravity shall meet the following requirements:
- 2.2.6.2.1. The equipment shall be so designed that the total content of the compartment or compartments can be measured at a flowrate greater than or equal to the minimum flowrate through the measuring system.
- 2.2.6.2.2. If there are links with the gas phase in the tank, appropriate devices shall prevent any gas from entering the meter.
- 2.2.6.2.3. The compartments of the tank shall be fitted with an anti-swirl device.
- 2.2.6.2.4. The requirements of 1.6.3.1, 1.6.3.2 and 1.6.3.4 shall apply. An accelerating pump may be used downstream of the point of transfer if the foregoing conditions are satisfied. Such a pump shall not allow any drop in pressure in the meter.
- 2.2.6.2.5. In some measuring systems, particularly those having a special gas extractor with an automatic stop device and those having a permanent venting communication with the atmosphere immediately downstream of the point of transfer, a gas indicator shall not be required.
- However, in measuring systems with a manual air-vent immediately downstream of the point of transfer, a gas indicator shall be mandatory except in systems where the pressure may not fall below atmospheric pressure.
- 2.2.6.3. Measuring systems which can operate either by pump or by gravity shall satisfy the requirements of 2.2.6.1 and 2.2.6.2.
- 2.2.6.4. Measuring systems fed by means of gas pressure may operate as empty-hose or as full-hose systems. The pipework linking the device to prevent gas entering the meter, as specified in 1.6.3.3, and the meter itself, shall not incorporate any constriction or component likely to cause a pressure loss which generates gaseous formation by releasing the gas dissolved in the liquid.
- Such systems shall incorporate a manometer which indicates the pressure inside the tank. The zone of permissible pressures shall be shown on the dial of the manometer.

<sup>(1)</sup> In the case of separators which comply with 1.6.2.1.5, experience shows that the requirement is generally met if the effective volume of the separator is at least 5% of the volume supplied, in one minute at the maximum flowrate of the measuring system.

- 2.3. **Reception measuring systems for the unloading of marine, rail and road tankers**
- 2.3.1. Measuring systems designed to measure the volume of liquids unloaded from marine, rail and road tankers shall incorporate an intermediate tank in which the level of the liquid determines the point of transfer.
- This intermediate tank may be designed to deal with gas elimination.
- 2.3.1.1. In the case of road and rail tankers, the intermediate tank shall automatically maintain a constant level which is visible or otherwise detectable at the start and on completion of the measuring operation. The permissible variations in the constant level shall correspond to a volume of no more than the maximum permissible error for the minimum reception.
- 2.3.1.2. In the case of marine tankers, provision for automatic maintenance of a constant level shall not be necessary; if no such provision is made, the variations in the content shall be measurable.
- If the marine tanker is emptied by pumps located in the bottom of the tanker, the intermediate tank need only be used at the beginning and end of reception.
- 2.3.1.3. In the two cases referred to in 2.3.1.1 and 2.3.1.2, the cross-section of the intermediate tank shall be such that a quantity equal to the maximum permissible error for the minimum reception corresponds to a difference in level of at least 2 mm.
- 2.4. **Measuring systems, whether stationary or fitted to road tankers, for the measuring of pressurized liquefied gas (excluding cryogenic liquids)**
- 2.4.1. There shall be a permanent link along rigid pipework between these measuring systems and their feed tanks. A non-return valve shall be fitted between the feed tanks and the meter.
- 2.4.2. A pressure maintenance device located downstream of the meter shall ensure that the product is in a liquid state inside the meter during the measuring process. The required pressure may be maintained either at a fixed value or at a value adjusted to suit measurement conditions.
- 2.4.2.1. If the pressure is maintained at a fixed value, that value shall be at least equal to the vapour pressure of the product at a temperature 15 °C higher than the highest possible in-service temperature. It shall be possible to seal the setting of the pressure maintenance device.
- 2.4.2.2. Where the pressure is adjusted to suit measurement conditions, it shall exceed the vapour pressure of the liquid by at least 100 kPa (1 bar) during measurement. This function shall be automatic.
- 2.4.2.3. In the case of stationary measuring systems for industrial use, the competent metrology service may authorize the use of manually adjustable pressure maintenance devices, in which case the pressure at the meter outlet shall not be less than the vapour pressure of the product at a temperature 15 °C above the temperature of the liquid during measurement. A diagram shall be affixed to the measuring system to show the vapour pressure of the product measured as a function of its temperature. If it is anticipated that these measuring systems may have to operate unsupervised for long periods, the temperature and pressure shall be registered continuously by recording equipment.
- 2.4.3. A gas-elimination device shall be provided upstream of the meter consisting of either a gas separator or a condenser tray.
- 2.4.3.1. The gas separator shall satisfy the general requirements laid down in section 1 for either the liquefied gas itself or for a liquid of greater viscosity.
- However, because of the difficulty of verification, it is permissible for a gas separator to be approved if its effective volume is not less than 1.5% of the volume delivered in one minute at maximum flowrate in cases where the pipe connecting the meter to the storage tank is not more than 25 m long. If it exceeds 25 m in length, the effective volume of the gas separator shall be not less than 3% of the volume delivered in one minute at maximum flowrate.

It shall not be necessary to fit either a gas indicator or a sight-glass to liquefied gas measuring systems.

The gas-evacuation pipe may be connected to the space containing the gas phase in the feed tank or to a self-contained pressure maintenance device set at a pressure 50 to 100 kPa (0.5 to 1 bar) below the pressure at the meter outlet. This pipe may incorporate a shut-off valve, but it must not be possible to close this valve during the measuring process.

- 2.4.3.2. The volume of the condenser tray shall depend on the volume of the pipework between the supply tank valve and the pressure maintenance valve downstream of the meter. It shall not be less than twice the decrease in volume of the liquid liable to occur if the temperature drops by a value conventionally fixed at 10 °C for pipework exposed to the atmosphere and 2 °C for buried or thermally insulated pipework. For the evaluation of the volume, coefficients of thermal expansion of  $3 \cdot 10^{-3}$  per degree Celsius for propane and propylene and  $2 \cdot 10^{-3}$  per degree Celsius for butane and butadiene shall be used instead of the exact values. For other products with a high vapour pressure, the values of the coefficient to be adopted shall be fixed by the competent metrology service.

The condenser tray shall be fitted with a manually operated blow-off device.

In a measuring system, the condenser tray shall be located at the highest point in the pipework.

The volume calculated by the foregoing method may be spread over several condenser trays located at the highest points in the pipework.

- 2.4.4. A thermowell shall be provided in the immediate vicinity of the meter. The thermometer used shall have a scale interval not exceeding 0.5 °C and shall be verified.

A manometer shall be fitted between the meter and the pressure maintenance valve.

For measuring systems incorporated in road tankers, a manometer socket shall be adequate.

- 2.4.5. Where the measuring process is carried out on a system fitted to a road tanker, there shall be no connection between the gas phases in the supply tank and the reception tank.

- 2.4.6. Safety valves may be incorporated into measuring systems for the purpose of preventing abnormally high pressure. If these valves are located downstream of the meter, they shall open into the atmosphere or be connected to the reception tank.

Under no circumstances shall the safety valves located upstream of the meter be connected by piping which by-passes the meter to the valves located downstream.

- 2.4.7. If operating conditions necessitate the use of detachable hoses, the hoses shall remain full if their volume is greater than the maximum permissible error for the minimum delivery.

Detachable full hoses shall be equipped with special 'coupler' connections for full hoses. Manual blow-off devices shall be provided, if necessary, at the ends of these hoses.

- 2.4.8. The monitoring valve of the double closing device specified in 1.11 for any pipework by-passing the meter must be capable of being shut off for safety reasons. In such cases, a manometer fitted between the two shut-off valves or any other equivalent system shall monitor any leakages.

## 2.5. Measuring systems for milk

- 2.5.1. The requirements of 2.5 shall apply to portable measuring systems used to monitor the reception of milk by collecting tankers, to fixed measuring systems used for reception and to portable or fixed measuring systems used for the delivery of milk.

- 2.5.2. In reception equipment, the point of transfer shall consist of a constant level in a tank located upstream from the meter. This constant level shall be visible before and after each measuring operation, and shall be automatically re-established.
- 2.5.2.1. Where the meter is supplied by a pump, the constant-level tank may be installed before the pump or between the pump and the meter.
- 2.5.2.1.1. In the first case the tank may itself be supplied by gravity, by the emptying of churns, or with the aid of an auxiliary pump or vacuum system.  
If the milk is delivered into the tank with the aid of a pump or a vacuum system, a gas eliminator shall be necessary; this eliminator may be combined with the constant-level tank.
- 2.5.2.1.2. In the second case, the constant-level tank shall act as a gas eliminator.
- 2.5.2.2. Notwithstanding the requirements of 1.8.3, the meter may function with the aid of a vacuum system. In this case, since the pressure inside the pipework between the constant-level tank and the meter is lower than atmospheric pressure, the pipework connections must be perfectly leak-tight. It must be possible to check this tightness.
- 2.5.2.3. In all cases of reception, the pipework upstream of the constant level must be completely emptied by an automatic mechanism under usual operating conditions.
- 2.5.2.4. The constant level shall be monitored by means of a sight-glass or level indicator. The level will be regarded as constant when it settles within a zone lying between two lines corresponding to a difference in volume of not more than twice the maximum permissible error on minimum delivery. The distance between the two lines must be at least 15 mm.
- 2.5.2.5. If, to meet the requirement of 2.5.2.4, decelerating mechanisms are incorporated in the measuring system, the flowrate during the decelerating period must not descend below the minimum flowrate of the meter.
- 2.5.2.6. If, in reception equipment, the liquid measured is conveyed at a level lower than that of the meter, an automatic mechanism shall ensure a pressure higher than atmospheric pressure at the meter outlet.
- 2.5.3. Measuring systems used for the delivery of milk shall meet the requirements of section 1.
- 2.5.4. Notwithstanding the general requirements of section 1 regarding the elimination of air or gas, gas elimination equipment shall meet the requirements of 1.6.1 under operating conditions only, i.e. when air enters at the beginning and end of each measuring operation.  
  
For reception equipment, the user shall be able to ascertain the leak-tightness of the connections so that no air may enter upstream of the meter during measuring. For delivery equipment, the system shall be assembled so that the liquid pressure in the connecting pipes running from the supply tank is always positive.

### 3. EEC PATTERN APPROVAL AND EEC INITIAL VERIFICATION

#### 3.1. EEC pattern approval

##### 3.1.1. *The following systems shall be subject to EEC pattern approval:*

- liquid-fuel measuring systems, referred to in 2.1. When such systems are designed for installation in a central supply system, the pattern approval certificate shall be accompanied by one or more specimen drawings showing the conditions for assembly at the place of use.

- measuring systems fitted to road tankers for the transport and delivery of liquids of low viscosity (viscosity  $\leq 20$  mPa·s) stored at atmospheric pressure (except potable liquids), referred to in 2.2,
- pressurized liquefied-gas measuring systems fitted to road tankers, referred to in 2.4,
- measuring systems for the reception of milk, referred to in 2.5.

3.1.2. *Tests*

- 3.1.2.1. In the execution of the tests, working standards and their use shall be determined in such a way that the measuring inaccuracy of the calibration method does not exceed one-fifth of the maximum permissible error for the measuring system under examination.

3.1.2.2. *Meter test*

It is first necessary to determine the curve of errors as a function of flowrate, using a sufficiently large number of measuring points between the minimum and maximum flowrates. It is necessary to verify in particular the width of the range of errors of the meter in the zone; the position of the error curve in relation to the zero line is of lesser importance.

It may also be necessary to carry out tests beyond the permitted flowrate limits.

Tests must also be carried out as far as possible at the operational limits, i.e. for the maximum and minimum temperatures and viscosities specified and for minimum delivery.

Except in the case of tests for minimum delivery, the test volume shall be selected so as to be large enough to ensure that the value of the scale of the indicator is never greater than one-third of the maximum permissible error.

Where EEC pattern approval has already been granted in respect of the meter and its ancillary equipment, it is necessary to verify whether the characteristics of the meter and of the measuring system are sufficiently compatible. If so, the meter need not be submitted to further tests, but the minimum delivery of the measuring system must be determined in accordance with 4.2 of Chapter I of the Annex to Directive 71/319/EEC.

Should the characteristics of the meter not be compatible with those of the measuring system, or should no EEC pattern approval have been granted in respect of the meter (and its ancillary equipment), the entire measuring system must be tested in accordance with this Directive and with Directives 71/319/EEC and 71/348/EEC.

3.1.2.3. *Tests for air or gas elimination*

The tests must show that the air or gas elimination equipment meets the requirements of 1.6.2.1.4, 1.6.2.1.5 and 1.6.2.2.4.

Where gas separators and special gas extractors are fitted, continuous elimination shall be checked by comparison of the measurement results of a suitable volumetric meter inserted downstream of the separator (special extractor) with and without the addition of air or gas.

Where special extractors are fitted, it is also necessary to test for the complete emptying of the tank. If possible, the tests should be carried out with the least favourable liquid. In tests on mock-ups or models on a different scale from the actual equipment, account shall be taken of the laws of similarity concerning viscosity (Reynolds), gravity (Froude) and surface tension (Weber). As a general rule tests on models shall only be carried out where justified.

3.1.2.4. *Tests on special measuring systems.*

3.1.2.4.1. *Liquid-fuel measuring systems.*

The tests shall comprise:

- (a) checking of the meter, checking of ancillary equipment and determination of the influence of such equipment (price indicator, printer, presetting device, etc.);

- (b) checking of the gas eliminator;
- (c) checking of the constancy of the volume of the hose;
- (d) a special check to verify regular advance of the price indicator (irregular advance may be induced in the first component of the price indicator by sudden closing of the delivery valve).

3.1.2.4.2. Liquefied gas measuring systems.

The examination shall comprise:

- (a) verification from drawings of the efficiency range and the design of gas separators;
- (b) an operating test on the gas eliminator (level regulator), which may be incorporated in the gas separator.

The pressure maintenance device shall also be verified on the drawing. A model test may possibly be required in special cases by the inspection authority.

3.2. EEC initial verification

3.2.1. General

3.2.1.1. EEC initial verification of measuring systems may be carried out in one or two stages.

3.2.1.1.1. It shall be carried out in one stage when the system is entirely manufactured by a single manufacturer, can be transported without being dismantled and when it is verified under the conditions in which it is intended to be operated.

3.2.1.1.2. It shall be carried out in two stages in all other cases.

The first stage concerns the meter only or the meter fitted with any ancillary equipment which must be associated with it, whether or not incorporated in a sub-assembly.

The first-stage tests may be carried out on a test bench (possibly in the manufacturer's factory) or on the installed measuring system. At this stage, the metrological examinations may be carried out with liquids other than those for which the system is intended.

The second stage concerns the measuring system under actual operating conditions. This shall be carried out at the place of installation, under operating conditions, and with the liquid for which the system is intended.

However, the second stage may be carried out in a place selected by the metrology service concerned when the measuring systems can be transported without being dismantled and the tests can be carried out under the conditions in which the measuring system is intended to be operated.

3.2.2. Tests

3.2.2.1. When EEC initial verification is carried out in one stage, all the tests referred to in 3.2.2.2 must be performed.

3.2.2.2. When the tests are carried out in two stages:

The first stage shall consist of:

- an examination of the conformity of the meter, including any ancillary equipment (conformity to the respective patterns),
- a metrological examination of the meter, including built-in ancillary equipment.

The second stage shall consist of:

- an examination of the conformity of the measuring system, including the meter and ancillary equipment,

- a metrological examination of the meter and ancillary equipment in the measuring system,
  - an operating test on the gas eliminator, if fitted; it shall not be necessary to check whether the maximum permissible errors for this device as provided for in 1.6 have been exceeded,
  - inspection of the adjustment of the required pressure maintenance devices,
  - verification of variations in the internal volume of hoses in full-hose systems,
  - determination of residual quantities in empty-hose systems.
-

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the Development Fund for the overseas countries and territories (1st Fund) for the 1972 financial year  
(77/314/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

charge to the Commission in respect of the financial administration of the Fund;

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Implementing Convention on the association of the overseas countries and territories with the Community, annexed to the Treaty,

Whereas an advance of 35 216 819.37 units of account has been paid to the European Development Fund (1963) (2nd EDF);

Having regard to Regulation No 5 laying down detailed provisions relating to the collection and transfer of financial contributions, the budgeting and administration of the resources of the Development Fund for the overseas countries and territories <sup>(1)</sup>, and in particular Article 16 thereof,

Whereas the overall implementation by the Commission of the 1972 operations of the first Development Fund during the 1972 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

Having regard to Regulation No 6 relating to the responsibility of authorizing and accounting officers for the resources of the Development Fund for the overseas countries and territories <sup>(2)</sup>,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the Development Fund for the overseas countries and territories (1st Fund) as at 31 December 1972,

HAS DECIDED AS FOLLOWS:

*Article 1*

Having regard to the report of the Audit Board on the accounts for the 1972 financial year, to which report are annexed the Commission's replies to the comments made by the Audit Board, and in particular the second part of that report, which deals with the Development Funds,

The position of the Council on comment 70 in the report of the Audit Board for the 1972 financial year is as set out in the Annex.

Having regard to the opinion of the European Parliament of 14 December 1976,

*Article 2*

Recalling that, in accordance with the provisions applicable to the implementation of the Development Fund for the overseas countries and territories (1st Fund), only the Council, acting by a qualified majority, shall give a dis-

The Council closes the revenue and expenditure accounts of the Development Fund for the overseas countries and territories (1st Fund) as at 31 December 1972 as follows:

**Revenue**

at the sum of 581 520 065.62 units of account;

**Expenditure (payments)**

at the sum of 546 303 246.25 units of account.

<sup>(1)</sup> OJ No 33, 31. 12. 1958, p. 681/58.<sup>(2)</sup> OJ No 33, 31. 12. 1958, p. 686/58.

*Article 3*

Done at Luxembourg, 5 April 1977.

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the Development Fund for the overseas countries and territories (1st Fund) for the 1972 financial year.

*For the Council**The President*

D. OWEN

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*ANNEX*

**The position of the Council on comment 70 of the Audit Board concerning the enforcement of the responsibilities assumed by the consultancy bureaux**

THE COUNCIL calls upon the Commission to continue its efforts to forestall and impose sanctions on the consequences, for the execution of projects, of the delays, shortcomings or omissions of certain studies.

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**COUNCIL DECISION  
of 5 April 1977**

**giving a discharge to the Commission in respect of the implementation of the operations of the  
European Development Fund (1963) (2nd EDF) for the 1972 financial year  
(77/315/EEC)**

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Convention of Association between the European Economic Community and the African States and Madagascar associated with the Community <sup>(1)</sup>, signed at Yaoundé on 20 July 1963,

Having regard to Council Decision 64/349/EEC of 25 February 1964 relating to the association of the overseas countries and territories with the European Economic Community <sup>(2)</sup>,

Having regard to the Internal Agreement on the financing and administration of Community aid <sup>(3)</sup>, signed at Yaoundé on 20 July 1963, and in particular Article 17 thereof,

Having regard to Financial Regulation 64/356/EEC of the European Development Fund set up under the Internal Agreement on the financing and administration of Community aid <sup>(4)</sup>, and in particular Articles 7 and 8 thereof,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the European Development Fund (1963) (2nd EDF) as at 31 December 1972,

Having regard to the report of the Audit Board on the accounts for the financial year 1972, to which report are annexed the Commission's replies to the comments made by the Audit Board,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the European Development Fund (1963) (2nd EDF), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas revenue for the 1972 financial year consisted mainly of the contributions of the Member States, amounting to 697 895 134.28 units of account, and of miscellaneous revenue of the Fund; whereas, moreover, an advance of 35 216 819.37 units of account was granted from the resources of the Development Fund for the overseas countries and territories (1st Fund);

Whereas the overall implementation by the Commission of the operations of the European Development Fund (1963) (2nd EDF) during the 1972 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The position of the Council on comments 80 and 81 in the report of the Audit Board for the 1972 financial year is as set out in the Annex.

*Article 2*

The Council closes the revenue and expenditure accounts of the European Development Fund (1963) (2nd EDF) as at 31 December 1972 as follows:

**Revenue**

at the sum of 701 448 955.20 units of account;

**Expenditure (payments)**

at the sum of 582 204 786.41 units of account.

<sup>(1)</sup> OJ No 93, 11. 6. 1964, p. 1431/64.

<sup>(2)</sup> OJ No 93, 11. 6. 1964, p. 1472/64.

<sup>(3)</sup> OJ No 93, 11. 6. 1964, p. 1493/64.

<sup>(4)</sup> OJ No 93, 11. 6. 1964, p. 1498/64.

*Article 3*

Done at Luxembourg, 5 April 1977.

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1963) (2nd EDF) for the 1972 financial year.

*For the Council**The President*

D. OWEN

## ANNEX

**Position of the Council on comments 80 and 81 of the Audit Board on price support operations**

THE COUNCIL calls upon the Commission to submit with all speed a comprehensive report on the management and operation of the fund for the support of oil products set up in 1971 and on any conclusions to be drawn for similar operations.

THE COUNCIL requests the Commission to take the necessary steps to pay the advance granted to the equalization fund of the OCAM Sugar Agreement.

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1969) (3rd EDF) for the 1972 financial year

(77/316/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Convention of Association between the European Economic Community and the African States and Madagascar associated with the Community <sup>(1)</sup>, signed at Yaoundé on 29 July 1969,

Having regard to Council Decision 70/549/EEC of 29 September 1970 on the association of the overseas countries and territories with the European Economic Community <sup>(2)</sup>,

Having regard to the Internal Agreement on the financing and administration of Community aid <sup>(3)</sup>, signed at Yaoundé on 29 July 1969, and in particular Article 22 thereof,

Having regard to Financial Regulation 71/68/EEC of the European Development Fund (1969) set up under the Internal Agreement on the financing and administration of Community aid <sup>(4)</sup>, and in particular Articles 7 and 8 thereof,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the European Development Fund (1969) (3rd EDF) as at 31 December 1972,

Having regard to the report of the Audit Board on the accounts for the 1972 financial year, to which report are annexed the Commission's replies to the comments made by the Audit Board,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the European Development Fund (1969) (3rd EDF), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas expenditure relating to the 1972 financial year was largely covered by an advance of 67 798 757.26 units of account from the resources of the European Development Fund (1963) (2nd EDF) and by miscellaneous revenue of the Fund;

Whereas the overall implementation by the Commission of the operations of the European Development Fund (1969) (3rd EDF) during the 1972 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The Council closes the revenue and expenditure accounts of the European Development Fund (1969) (3rd EDF) as at 31 December 1972 as follows:

**Expenditure (payments)**

at the sum of 65 642 527.84 units of account.

*Article 2*

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1969) (3rd EDF) for the 1972 financial year.

Done at Luxembourg, 5 April 1977.

*For the Council*

*The President*

D. OWEN

<sup>(1)</sup> OJ No L 282, 28. 12. 1970, p. 2.

<sup>(2)</sup> OJ No L 282, 28. 12. 1970, p. 83.

<sup>(3)</sup> OJ No L 282, 28. 12. 1970, p. 47.

<sup>(4)</sup> OJ No L 31, 8. 2. 1971, p. 1.

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the Development Fund for the overseas countries and territories (1st Fund) for the 1973 financial year

(77/317/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Implementing Convention on the association of the overseas countries and territories with the Community, annexed to the Treaty,

Having regard to Regulation No 5 laying down detailed provisions relating to the collection and transfer of financial contributions, the budgeting and administration of the resources of the Development Fund for the overseas countries and territories <sup>(1)</sup>, and in particular Article 16 thereof,

Having regard to Regulation No 6 relating to the responsibility of authorizing and accounting officers for the resources of the Development Fund for the overseas countries and territories <sup>(2)</sup>,

Having regard to the Council Decision of 30 May 1972 on the transfer and utilization of the unexpended balance of the Development Fund for the overseas countries and territories set up by the Implementing Convention annexed to the Treaty establishing the European Economic Community,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the Development Fund for the overseas countries and territories (1st Fund) as at 31 December 1973 <sup>(3)</sup>,

Having regard to the report of the Audit Board on the accounts for the 1973 financial year, to which report are annexed the Commission's replies to the comments made by the Audit Board, and in particular the second part of this report, which deals with the Development Funds,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the Development Fund for the overseas countries and territories (1st Fund), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas an advance of 25 331 479.75 units of account has been paid to the European Development Fund (1963) (2nd EDF);

Whereas the overall implementation by the Commission of the operations of the first Development Fund during the 1973 financial year was such as to warrant its being given a discharge in respect of the implementation of these operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The Council closes the revenue and expenditure accounts of the Development Fund for the overseas countries and territories (1st Fund) as at 31 December 1973 as follows:

**Revenue**

at the sum of 581 520 065.62 units of account;

**Expenditure (payments)**

at the sum of 556 188 585.87 units of account.

*Article 2*

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the Development Fund for the overseas countries and territories (1st Fund) for the 1973 financial year.

Done at Luxembourg, 5 April 1977.

*For the Council*

*The President*

D. OWEN

<sup>(1)</sup> OJ No 33, 31. 12. 1958, p. 681/58.

<sup>(2)</sup> OJ No 33, 31. 12. 1958, p. 686/58.

<sup>(3)</sup> OJ No C 148, 27. 11. 1974, p. 15.

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1963) (2nd EDF) for the 1973 financial year

(77/318/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Convention of Association between the European Economic Community and the African States and Madagascar associated with the Community<sup>(1)</sup>, signed at Yaoundé on 20 July 1963,

Having regard to Council Decision 64/349/EEC of 25 February 1964 relating to the association of the overseas countries and territories with the European Economic Community<sup>(2)</sup>,

Having regard to the Internal Agreement on the financing and administration of Community aid<sup>(3)</sup>, signed at Yaoundé on 20 July 1963, and in particular Article 17 thereof,

Having regard to Financial Regulation 64/356/EEC of the European Development Fund set up under the Internal Agreement on the financing and administration of Community aid<sup>(4)</sup>, and in particular Articles 7 and 8 thereof,

Having regard to the Council Decision of 30 May 1972 on the transfer and utilization of the unexpended balances of the Development Fund for the overseas countries and territories set up by the Implementing Convention annexed to the Treaty establishing the European Economic Community,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the European Development Fund (1963) (2nd EDF) as at 31 December 1973<sup>(5)</sup>,

Having regard to the report of the Audit Board on the accounts for the financial year 1973, to which report are an-

nexed the Commission's replies to the comments made by the Audit Board,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the European Development Fund (1963) (2nd EDF), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas revenue for the 1973 financial year consisted mainly of the contributions of the Member States, amounting to 724 534 024.54 units of account, and of miscellaneous revenue of the Fund; whereas, moreover, an advance of 25 331 472.75 units of account was granted from the resources of the Development Fund for the overseas countries and territories (1st Fund);

Whereas, pursuant to the abovementioned Council Decision of 30 May 1972, the amount 9 015 638.83 units of account was transferred as the unexpended balance from the first Fund to the second EDF;

Whereas the overall implementation by the Commission of the operations of the European Development Fund (1963) (2nd EDF) during the 1973 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The Council closes the revenue and expenditure accounts of the European Development Fund (1963) (2nd EDF) as at 31 December 1973 as follows:

**Revenue**

at the sum of 728 005 544.61 units of account;

**Expenditure (payments)**

at the sum of 631 666 809.15 units of account.

<sup>(1)</sup> OJ No 93, 11. 6. 1964, p. 1431/64.

<sup>(2)</sup> OJ No 93, 11. 6. 1964, p. 1472/64.

<sup>(3)</sup> OJ No 93, 11. 6. 1964, p. 1493/64.

<sup>(4)</sup> OJ No 93, 11. 6. 1964, p. 1498/64.

<sup>(5)</sup> OJ No C 148, 27. 11. 1974, p. 15.

*Article 2*

Done at Luxembourg, 5 April 1977.

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1963) (2nd EDF) for the 1973 financial year.

*For the Council**The President*

D. OWEN

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1969) (3rd EDF) for the 1973 financial year

(77/319/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Convention of Association between the European Economic Community and the African States and Madagascar associated with the Community <sup>(1)</sup>, signed at Yaoundé on 29 July 1969,

Having regard to Council Decision 70/549/EEC of 29 September 1970 on the association of the overseas countries and territories with the European Economic Community <sup>(2)</sup>,

Having regard to the Internal Agreement on the financing and administration of Community aid <sup>(3)</sup>, signed at Yaoundé on 29 July 1969, and in particular Article 22 thereof,

Having regard to Financial Regulation 71/68/EEC of the European Development Fund (1969) set up under the Internal Agreement on the financing and administration of Community aid <sup>(4)</sup>, and in particular Articles 7 and 8 thereof,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the European Development Fund (1969) (3rd EDF) as at 31 December 1973 <sup>(5)</sup>,

Having regard to the report of the Audit Board on the accounts for the financial year 1973, to which report are annexed the Commission's replies to the comments made by the Audit Board,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the European Development Fund (1969) (3rd EDF), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas revenue for the 1973 financial year consisted mainly of the contributions of the Member States, amounting to 126 391 146.75 units of account, and of miscellaneous revenue of the Fund; whereas, moreover, an advance of 44 474 776.19 units of account was granted from the resources of the European Development Fund (1963) (2nd EDF);

Whereas the overall implementation by the Commission of the operations of the European Development Fund (1969) (3rd EDF) during the 1973 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The position of the Council on comment 140 in the report of the Audit Board for the 1973 financial year is as set out in the Annex.

*Article 2*

The Council closes the revenue and expenditure accounts of the European Development Fund (1969) (3rd EDF) as at 31 December 1973 as follows:

**Revenue**

at the sum of 171 489 793.54 units of account;

**Expenditure (payments)**

at the sum of 163 789 469.33 units of account.

<sup>(1)</sup> OJ No L 282, 28. 12. 1970, p. 2.

<sup>(2)</sup> OJ No L 282, 28. 12. 1970, p. 83.

<sup>(3)</sup> OJ No L 282, 28. 12. 1970, p. 47.

<sup>(4)</sup> OJ No L 31, 8. 2. 1971, p. 1.

<sup>(5)</sup> OJ No C 148, 27. 11. 1974, p. 15.

*Article 3*

Done at Luxembourg, 5 April 1977.

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1969) (3rd EDF) for the 1973 financial year.

*For the Council**The President*

D. OWEN

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ANNEX**Position of the Council on comment 140 of the Audit Board on resident and technical supervision**

THE COUNCIL calls upon the Commission to ensure the progressive absorption of EAC officials on special contracts into the established staff of the Commission.

It notes that the Commission does not intend to replace EAC employees absorbed in this way by issuing further special contracts.

On this occasion, the Council calls upon the Commission to submit to it, as soon as possible, a full report on its delegation staff policy in the framework of contractual relations with the ACP States and the Mediterranean countries.

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## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the Development Fund for the overseas countries and territories (1st Fund) for the 1974 financial year

(77/320/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Implementing Convention on the association of the overseas countries and territories with the Community, annexed to the Treaty,

Having regard to Regulation No 5 laying down detailed provisions relating to the collection and transfer of financial contributions, the budgeting and administration of the resources of the Development Fund for the overseas countries and territories <sup>(1)</sup>, and in particular Article 16 thereof,

Having regard to Regulation No 6 relating to the responsibility of authorizing and accounting officers for the resources of the Development Fund for the overseas countries and territories <sup>(2)</sup>,

Having regard to the Council Decision of 30 May 1972 on the transfer and utilization of the unexpended balances of the Development Fund for the overseas countries and territories set up by the Implementing Convention annexed to the Treaty establishing the European Economic Community,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the Development Fund for the overseas countries and territories (1st Fund) as at 31 December 1974 <sup>(3)</sup>,

Having regard to the report of the Audit Board on the accounts for the 1974 financial year, to which report are annexed the Commission's replies to the comments made by the Audit Board, and in particular the second part of this report, which deals with the Development Funds,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the Development Fund for the overseas countries and territories (1st Fund), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas an advance of 19 543 038 39 units of account has been paid to the European Development Fund (1963) (2nd EDF);

Whereas the overall implementation by the Commission of the operations of the first Development Fund during the 1974 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The Council closes the revenue and expenditure accounts of the Development Fund for the overseas countries and territories (1st Fund) as at 31 December 1974 as follows:

**Revenue**

at the sum of 581 250 000·00 units of account;

**Expenditure (payments)**

at the sum of 561 706 961·61 units of account.

*Article 2*

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the Development Fund for the overseas countries and territories (1st Fund) for the 1974 financial year.

Done at Luxembourg, 5 April 1977.

*For the Council*

*The President*

D. OWEN

<sup>(1)</sup> OJ No 33, 31. 12. 1958, p. 681/58.

<sup>(2)</sup> OJ No 33, 31. 12. 1958, p. 686/58.

<sup>(3)</sup> OJ No C 73, 29. 3. 1976, p. 36.

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1963) (2nd EDF) for the 1974 financial year

(77/321/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Convention of Association between the European Economic Community and the African States and Madagascar associated with the Community<sup>(1)</sup>, signed at Yaoundé on 20 July 1963,

Having regard to Council Decision 64/349/EEC of 25 February 1964 relating to the association of the overseas countries and territories with the European Economic Community<sup>(2)</sup>,

Having regard to the Internal Agreement on the financing and administration of Community aid<sup>(3)</sup>, signed at Yaoundé on 20 July 1963, and in particular Article 17 thereof,

Having regard to Financial Regulation 64/356/EEC of the European Development Fund set up under the Internal Agreement on the financing and administration of Community aid<sup>(4)</sup>, and in particular Articles 7 and 8 thereof,

Having regard to the Council Decision of 30 May 1972 on the transfer and utilization of the unexpended balances of the Development Fund for the overseas countries and territories set up by the Implementing Convention annexed to the Treaty establishing the European Economic Community,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the European Development Fund (1963) (2nd EDF) as at 31 December 1974<sup>(5)</sup>,

Having regard to the report of the Audit Board on the accounts for the financial year 1974, to which report are an-

nexed the Commission's replies to the comments made by the Audit Board,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the European Development Fund (1963) (2nd EDF), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas revenue for the 1974 financial year consisted mainly of the contributions of the Member States, amounting to 724 534 024.54 units of account, and of miscellaneous revenue of the Fund; whereas, moreover, an advance of 19 543 038.39 units of account was granted from the resources of the Development Fund for the overseas countries and territories (1st Fund);

Whereas pursuant to the abovementioned Council Decision of 30 May 1972 an amount of 9 963 387.32 units of account was transferred as the unexpended balance from the first Fund to the second European Development Fund;

Whereas the overall implementation by the Commission of the operations of the European Development Fund (1963) (2nd EDF) during the 1974 financial year was such as to warrant its being given a discharge in respect of the implementation of these operations;

HAS DECIDED AS FOLLOWS:

*Article 1*

The Council closes the revenue and expenditure accounts of the European Development Fund (1963) (2nd EDF) as at 31 December 1974 as follows:

**Revenue**

at the sum of 726 275 610.23 units of account;

**Expenditure (payments)**

at the sum of 657 536 594.00 units of account.

(1) OJ No 93, 11. 6. 1964, p. 1431/64.

(2) OJ No 93, 11. 6. 1964, p. 1472/64.

(3) OJ No 93, 11. 6. 1964, p. 1493/64.

(4) OJ No 93, 11. 6. 1964, p. 1498/64.

(5) OJ No C 73, 29. 3. 1976, p. 36.

*Article 2*

Done at Luxembourg, 5 April 1977.

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1963) (2nd EDF) for the 1974 financial year.

*For the Council**The President*

D. OWEN

## COUNCIL DECISION

of 5 April 1977

giving a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1969) (3rd EDF) for the 1974 financial year

(77/322/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to the Convention of Association between the European Economic Community and the African States and Madagascar associated with the Community <sup>(1)</sup>, signed at Yaoundé on 29 July 1969,

Having regard to Council Decision 70/549/EEC of 29 September 1970 on the association of the overseas countries and territories with the European Economic Community <sup>(2)</sup>,

Having regard to the Internal Agreement on the financing and administration of Community aid <sup>(3)</sup>, signed at Yaoundé on 29 July 1969, and in particular Article 22 thereof,

Having regard to Financial Regulation 71/68/EEC of the European Development Fund (1969) set up under the Internal Agreement on the financing and administration of Community aid <sup>(4)</sup>, and in particular Articles 7 and 8 thereof,

Having regard to the revenue and expenditure accounts, the statement and the summary of operations of the European Development Fund (1969) (3rd EDF) as at 31 December 1974 <sup>(5)</sup>,

Having regard to the report of the Audit Board on the accounts for the 1974 financial year, to which report are annexed the Commission's replies to the comments made by the Audit Board,

Having regard to the opinion of the European Parliament of 14 December 1976,

Recalling that, in accordance with the provisions applicable to the implementation of the European Development Fund (1969) (3rd EDF), only the Council, acting by a qualified majority, shall give a discharge to the Commission in respect of the financial administration of the Fund;

Whereas revenue for the 1974 financial year consisted mainly of the contributions of the Member States, amounting to 268 301 701.61 units of account, and of miscellaneous revenue of the Fund; whereas, moreover, an advance of 89 965 223.06 units of account was granted from the resources of the previous Funds;

Whereas the overall implementation by the Commission of the operations of the European Development Fund (1969) (3rd EDF) during the 1974 financial year was such as to warrant its being given a discharge in respect of the implementation of those operations,

HAS DECIDED AS FOLLOWS:

*Article 1*

The Council closes the revenue and expenditure accounts of the European Development Fund (1969) (3rd EDF) as at 31 December 1974 as follows:

**Revenue**

at the sum of 360 641 648.63 units of account;

**Expenditure (payments)**

at the sum of 304 425 111.35 units of account.

*Article 2*

The Council hereby gives a discharge to the Commission in respect of the implementation of the operations of the European Development Fund (1969) (3rd EDF) for the 1974 financial year.

Done at Luxembourg, 5 April 1977.

*For the Council**The President*

D. OWEN

<sup>(1)</sup> OJ No L 282, 28. 12. 1970, p. 2.

<sup>(2)</sup> OJ No L 282, 28. 12. 1970, p. 83.

<sup>(3)</sup> OJ No L 282, 28. 12. 1970, p. 47.

<sup>(4)</sup> OJ No L 31, 8. 2. 1971, p. 1.

<sup>(5)</sup> OJ No C 73, 29. 3. 1976, p. 36.

## CORRIGENDA

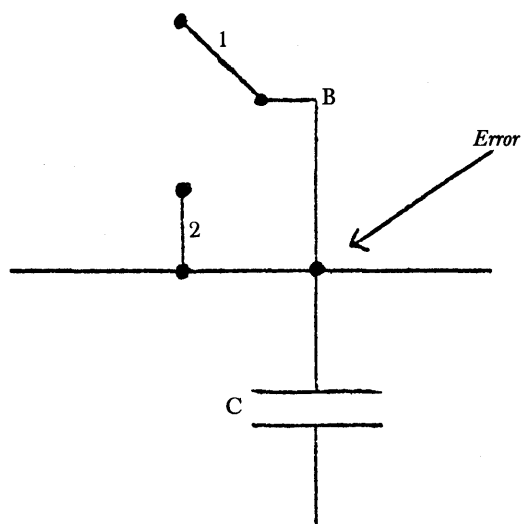
Corrigendum to Council Directive 76/889/EEC of 4 November 1976 on the approximation of the laws of the Member States relating to radio interference caused by electrical household appliances, portable tools and similar equipment

(Official Journal of the European Communities, No L 336 of 4 December 1976)

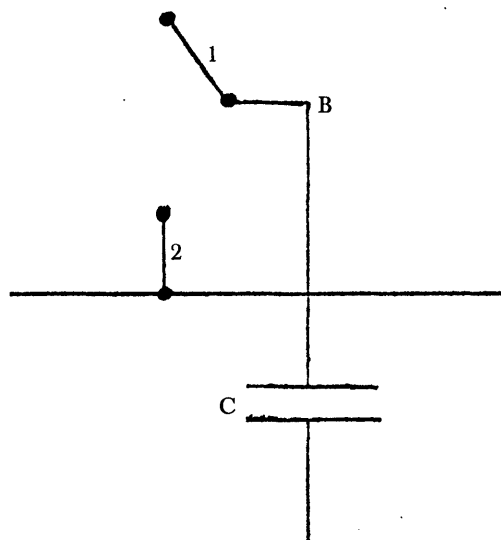
Page 16, Figure 3:

The connection from switch B to the probe is shown incorrectly and should be amended as shown below:

*incorrect arrangement*



*correct arrangement*



Corrigendum to Council Directive 76/890/EEC of 4 November 1976 on the approximation of the laws of the Member States relating to the suppression of radio interference with regard to fluorescent lighting luminaires fitted with starters

(Official Journal of the European Communities, No L 336 of 4 December 1976)

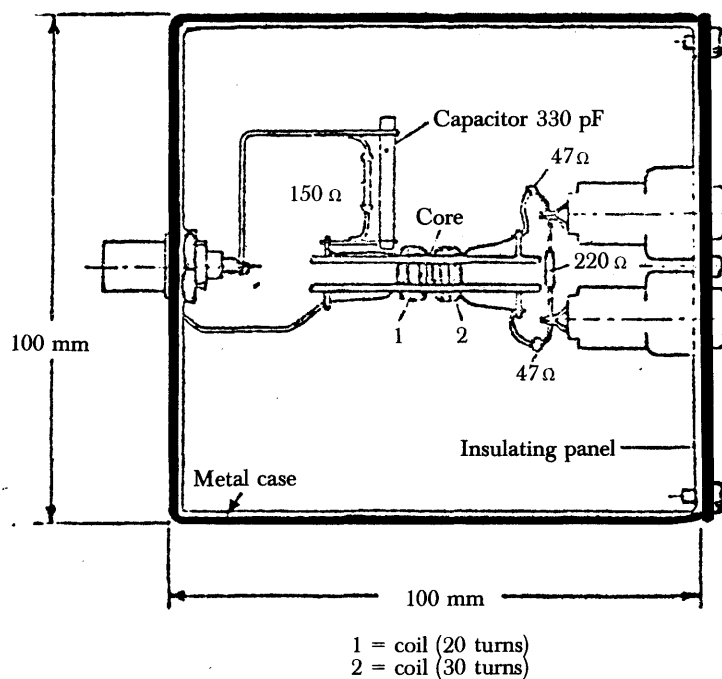
Page 25, point 4.3, seventh line:

for: ' $S_n^2$  is the standard deviation of the sample, where:'

read: ' $S_n$  is the standard deviation of the sample, where:'.

Page 26, Figure 1:

The right-hand diagram of this figure was printed incorrectly and should be amended as shown below:



Page 26, Figure 2:

This figure was printed incorrectly and should be amended as shown below:

