

COMMISSION OF THE EUROPEAN COMMUNITIES

COM (78) 389 final

Brussels, 20 September 1978

PROPOSAL FOR A COUNCIL DIRECTIVE ON THE APPROXIMATION OF THE LAWS OF THE MEMBER STATES RELATING TO THE ROLL-OVER PROTECTION STRUCTURES OF WHEELED AGRICULTURAL OR FORESTRY TRACTORS - STATIC TESTS -

(Submitted by the Commission to the Council)

COM (78) 389 final

EXPLANATORY MEMORANDUMI. General

The Community type-approval procedure for wheeled agricultural or forestry tractors covered by Council Directive 74/150/EEC of 4 March 1974 (1) also includes roll-over protective structures (safety cabs and frames). On a proposal from the Commission the Council adopted on 28 June 1977 a Directive on this subject, covering more specifically the requirements, based on dynamic tests (pendulum tests), for testing the strength of safety cabs or frames and their attachment to the tractor (2). This Directive is based on the standardized testing codes for agricultural tractors adopted by the Organization for Economic Cooperation and Development in 1970 and 1973. It emerged during the preparation of this Directive that there were several gaps in both of these codes which, in particular, did not enable light tractors (mass less than 1.5t) and heavy tractors (mass greater than 4.5t) to be tested. However, owing to recent advances in technology there is a marked trend towards the production and therefore use of heavy tractors. It is therefore essential also to be able to test the protective structures of such tractors by means of a common inspection procedure in order to facilitate (a) the increased trade in tractors of this type and (b) also to provide the users of heavy tractors with satisfactory safety in the event of tractor roll-over. The Commission therefore made a group of researchers responsible for preparing draft test requirements which could reproduce as faithfully as possible actual roll-over conditions. The surveys carried out have shown that the dynamic tests were not adapted to tractors having a mass of more than 4.5t since, despite the very precise specifications as regards the attachment of the tractor to the ground during the test, the proportion of the nominal energy absorbed by the ROPS can vary widely during tests as a result of

(1) OJ N° L 84, 28 March 1974, p.10

(2) OJ N° L220, 29 August 1977, p.1

differing uncontrollable variables. On the other hand static tests enable a significant number of these drawbacks to be eliminated since the forces and deflections can be recorded constantly during the loading tests. In case of doubt it is possible to interrupt the test in order to observe more closely the process of deformation or crack formation, for example.

It can be concluded that the test conditions as envisaged in the annex to this proposal for a directive represent fairly closely what happens in reality, thus enabling structures not guaranteeing a sufficiently high level of safety to be eliminated or in other words structures which show excessive breakage and cracking during tests, or structures which include into the clearance zone under the effect of the load, i.e. into the zone around the driving seat which the structure must be able to protect in the event of an accident.

The static tests can be carried out on all types of tractors having a mass of more than 1.5 t. They are not suitable for light tractors (and in particular vineyard or orchard tractors) which are still in the process of harmonization. The drawing-up of a test code for tractors of this type raises considerable difficulties owing to their highly specialized structure and conditions of use (need, for example, to be able to remove the roll-over hoop).

In contrast the static tests are also suitable for the range of tractors falling within the scope of the Council Directive of 28 June 1977 relating to dynamic strength testing, i.e. tractors having a mass of 1.5 - 4.5 t.

It ought therefore to have been possible to envisage the repeal of this directive, but on reflection such a measure involves several drawbacks. Owing to the existence of the OECD codes for several years the manufactures have in their possession equipment which is suitable for dynamic tests to meet the needs of prior inspection at the design stage of structures, followed by the checks for conformity with an approved type.

These tests, at least at the present state of the art, can to a great extent be considered as equivalent to the static tests for the range of tractors having a mass of 1.5 - 4.5 t. Requiring manufacturers to acquire extremely costly equipment in order to be able to inspect structures on the basis of static tests is unjustifiable. It is therefore proposed that for this range of tractors a choice of test method (dynamic or static) to which the structure will be submitted during the type-approval tests be left to the manufacturers.

In the long term, however, it will doubtless be advisable to leave just the static tests since these have the certain advantage of being able to check a very wide range of safety cabs and frames with one single installation. It is thus foreseeable that the development of testing techniques will first of all involve static tests. Their accuracy will in consequence certainly become greater than that of dynamic tests, so that the two types of test will no longer be able to be considered as equivalent in reproducing the consequences of an actual accident.

It must also not be forgotten that static testing technology is in its infancy and that experience is currently limited to that acquired during the research and experimental phase. In other words there is a lack of practical experience which is only acquired during the general application of a regulation and which enables any gaps and inaccuracies in a testing code to be pinpointed. It is however not possible to establish here and now from what date the dynamic tests should be abandoned. It is therefore proposed that this decision be postponed and be taken at the appropriate time via the procedure known as the Committee on the Adaptation to Technical Progress, which was introduced by the Directive on the type-approval of wheeled agricultural or forestry tractors.

It is proposed that only the static test be applicable to tractors having a mass of more than 4.5 t. Such tractors would in addition also be required to be fitted with a ROPS in order to be eligible for EEC type-approval. This condition has already been imposed on tractors having a mass of 1.5 - 4.5 t by the Council Directive of 28 June 1977.

Apart from the obvious beneficial effect of this directive in diminishing the effects of an accident it can be stated that it would also have a favourable economic impact. The intensive mechanization of agriculture and the trend towards heavier tractors with a view to work rationalization makes the approximation of laws particularly necessary and urgent. The principle of mutual recognition of inspections saves manufacturers in the Member States work and above all considerably reduces expenditure by avoiding the repetition of destructive tests which are particularly costly.

II. Comments on the articles

Article 1-6 introduce the EEC type-approval procedure for ROPS. The aim of the directive is the free circulation of such items of equipment within the Community by prohibiting the Member States from opposing their marketing if they meet the structural and testing requirements laid down in the annexes and if they bear the EEC type-approval mark, a model of which is contained in Annex VI. This procedure provides for a system of mutual information on all type-approvals issued, refused and withdrawn. The application for EEC type-approval can be filed either by the manufacturer of the equipment or by the manufacturer of the tractor.

Article 7 incorporates the requirements relating to ROPS into the EEC type-approval procedure. It also grants manufacturers the facility of requesting that the Community requirements be taken as the basis for inspection where national type-approval is granted.

For the moment there is no national type-approval procedure in some new Member States and so it is necessary to provide for provisions enabling the use of tractors complying with the requirements of the Directive (Article 8) to be guaranteed in these States.

Article 9 defines an agricultural or forestry tractor and sets out the scope of the Directive. This scope is precisely defined in order to exclude highly specific tractors which cannot meet the test requirements. These include, inter alia, crawler, straddle, vineyard, and certain garden or horticultural tractors.

Tractors of these special types will be included in the scope of the Directive as and when suitable testing requirements have been drawn up.

Article 10 obliges all tractors referred to in this Directive to be fitted with a roll-over protection structure fulfilling the requirements of the Directive. However, up to a date still to be determined devices meeting the requirements of Directive 75/536/EEC on dynamic testing shall also be accepted.

Article 11 states that the requirements of the annexes may be amended in order to adapt them to technical progress via the procedure set out in Article 13 of Council Directive 74/150/EEC of 4 March 1974 on type-approval.

Article 12 provides for a period of eighteen months during which the Member States can adapt to the Directive.

Finally, the Commission must be informed within a reasonable time of any draft provisions drawn up by the Member States in the field covered by the Directive so that it can make comments if necessary (Article 6, sub-section 2).

III. Consultation of the European Parliament and the Economic and Social Committee

The opinion of these two bodies is required pursuant to the provisions of Article 100, paragraph 2.

PROPOSAL FOR A
COUNCIL DIRECTIVE

on the approximation of the laws of the Member States relating to the roll-over protection structures of wheeled agricultural or forestry tractors
(static testing)

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,

Having regard to the opinion of the Economic and Social Committee,

Whereas the technical requirements with which tractors must comply pursuant to national laws relate inter alia to roll-over protection structures and to their attachment to the tractor;

Whereas those requirements differ from one Member State to another; whereas it is therefore necessary that all Member States adopt the same requirements either in addition to or in place of their existing rules in order, in particular, to allow the EEC type-approval procedure 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⁽¹⁾ to be applied in respect of each type of tractor;

Whereas a harmonized component type-approval procedure for roll-over protection structures and their attachment to the tractor makes it possible for each Member State to check compliance with the common construction and testing requirements and to inform the other Member States of its findings by sending them a copy of the component type-approval certificate completed for each type of roll-over protection structure

⁽¹⁾ OJ N° L 84, 28.3.1974, p.10.

and its attachment to the tractor; whereas the placing of an EEC component type-approval mark on all structures manufactured in conformity with the approved type obviates any need for technical checks on those structures in the other Member States ;

Whereas common requirements concerning other elements and characteristics of the roll-over protection structure, in particular those concerning the dimensions, doors, safety glass, devices to prevent continuous rolling if the tractor overturns, and protection of passengers, will be laid down at a later date ;

Whereas the harmonized requirements are intended principally to ensure safety on the road and at work throughout the Community; whereas for this reason it is necessary to introduce the obligation for tractors covered by this Directive to be fitted with roll-over protection structures; whereas until a date to be determined the tractors referred to in Council Directive 77/536/EEC of 28 June 1977 on the approximation of the laws of the Member States relating to the roll-over protection structures of wheeled agricultural or forestry tractors (1) should also be able to be fitted, at the manufacturers discretion, with a roll-over protective structure complying with this Directive ;

Whereas the approximation of the national laws relating to tractors entails reciprocal recognition by Member States of the checks carried out by each of them on the basis of the common requirements,

HAS ADOPTED THIS DIRECTIVE :

Article 1

1. Each Member State shall grant EEC component type-approval for any type of roll-over protection structure and its tractor attachment which satisfies the construction and testing requirements laid down in Annexes I, II, III, IV and V hereto.
2. The Member State which has granted EEC component type-approval shall take the measures required to verify, in so far as is necessary and if need

(1) OJ N° L 220, 29.8.1977, p.1.

be in cooperation with the competent authorities in the other Member States, that production models conform to the approved type. Such verification shall be limited to spot checks.

Article 2

Member States shall, for each type of roll-over protection structure and its tractor attachment which they approve pursuant to Article 1, issue to the manufacturer of the tractor or of the roll-over protection structure, or to his authorized representative, an EEC component type-approval mark conforming to the model shown in Annex VI hereto.

Member States shall take all appropriate measures to prevent the use of marks liable to create confusion between roll-over protection structures which have been component type-approved pursuant to Article 1 and other devices.

Article 3

1. No Member State may prohibit the placing on the market of roll-over protection structures or their tractor attachment on grounds relating to their construction if they bear the EEC component type-approval mark.
2. Nevertheless, a Member State may prohibit the placing on the market of roll-over protection structures bearing the EEC component type-approval mark which consistently fail to conform to the approved type.

That State shall forthwith inform the other Member States and the Commission of the measures taken, specifying the reasons for its decision.

Article 4

The competent authorities of each Member State shall within one month send to the competent authorities of the other Member States a copy of the component type-approval certificates, the model for which is given in Annex VII, for each type of roll-over protection structure which they approve or refuse to approve.

Article 5

1. If the Member State which has granted EEC component type-approval finds that a number of roll-over protection structures and their tractor attachments bearing the same EEC component type-approval mark do not conform to the type which it has approved, it shall take the necessary measures to ensure that production models conform to the approved type. The competent authorities of that State shall advise those of the other Member States of the measures taken which may, if necessary, where there is serious and repeated failure to conform, extend to withdrawal of EEC component type-approval. The said authorities shall take the same measures if they are informed by the competent authorities of another Member State of such failure to conform.
2. The competent authorities of the Member States shall within one month inform each another of any withdrawal of EEC component type-approval and of the reasons for any such measure.

Article 6

Any decision taken pursuant to the provisions adopted in implementation of this Directive to refuse or withdraw component type-approval for roll-over protection structures and their tractor attachments, or to prohibit their placing on the market or their use, shall set out in detail the reasons on which it is based. Such decision shall be notified to the party concerned, who shall at the same time be informed of the remedies available to him under the laws in force in the Member States and of the time limits allowed for the exercise of such remedies.

Article 7

No Member State may refuse to grant EEC type-approval or national type-approval in respect of a tractor on grounds relating to roll-over protection structures or their tractor attachments if these bear the EEC component type-approval mark and if the requirements laid down in Annex VIII have been satisfied.

Article 8

No Member State may refuse or prohibit the sale, registration, entry into service or use of any tractor on grounds relating to the roll-over

protection structure and its tractor attachment if these bear the EEC component type-approval mark and if the requirements laid down in Annex VIII have been met.

Article 9

This Directive shall apply to tractors as defined in Article 1 of Directive 74/150/EEC having the following characteristics :

- clearance beneath the rear axle of not more than 1 000 mm,
- fixed or adjustable track width of one of the driving axles of 1 150 mm or more,
- possibility of being fitted with a multipoint coupling device for detachable tools and a draw bar,
- mass greater than or equal to 1.5 tonnes, corresponding to the unladen weight of the tractor as defined in item 2.4 of Annex I to Directive 74/150/EEC, including the roll-over protection structure fitted in compliance with the present Directive and tyres of the largest size recommended by the manufacturer.

Article 10

For purposes of EEC type-approval any tractor coming within the terms of Article 9 must be fitted with a roll-over protection structure which satisfies the requirements laid down in Annexes I to IV.

However tractors as defined in Article 9 of Directive 77/536/EEC may for purposes of EEC type approval be fitted with a roll-over protection structure which satisfies the requirements laid down in Annexes I to IV of that Directive.

Article 11

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

Article 12

1. Member States shall bring into force the provisions necessary in order 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 13

This Directive is addressed to the Member States.

LIST OF ANNEXES

- ANNEX I: Conditions for EEC component type-approval
- ANNEX II: Conditions for testing the strength of the protection structures and of their attachment to tractors
- ANNEX III: Test procedures
- ANNEX IV: Figures
- ANNEX V: Test report model
- ANNEX VI: Marks
- ANNEX VII: Model of EEC component type-approval certificate
- ANNEX VIII: Conditions for EEC type-approval
- ANNEX IX: Annex to the EEC type-approval certificate for a tractor with regard to the strength of the protection structures as well as of their attachment to the tractor.
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ANNEX I

CONDITIONS FOR EEC COMPONENT TYPE-APPROVAL

1. DEFINITIONS

1.1. A roll-over protection structure (safety cab or frame), hereafter called protection structure, means the structure on a tractor the essential purpose of which is to avoid or limit risks to the driver resulting from roll-over of the tractor during normal use.

1.2. The structures mentioned in 1.1 are characterized by the fact that, in the event of roll-over, they ensure an unobstructed space inside them large enough to protect the driver.

2. GENERAL REQUIREMENTS

2.1. Every protection structure and its attachment to a tractor must be so designed and constructed as to fulfil the essential purpose laid down in 1.

2.2. This requirement shall be checked by the test method described in Annex III.

3. APPLICATION FOR EEC COMPONENT TYPE-APPROVAL

3.1. The application for EEC component type-approval with regard to the strength of a protection structure and the strength of its attachment to a tractor shall be submitted by the tractor manufacturer or by the manufacturer of the protection structure or by their authorized representatives.

3.2. The application for EEC component type-approval shall be accompanied by the undermentioned documents in triplicate and by the following particulars:

- general arrangement drawing either to a scale marked on the drawing or giving the main dimensions of the protection structure. This drawing must in particular show details of the mounting components,
- photographs from side and rear showing mounting details.

- brief description of the protection structure including type of construction, details of mounting on the tractor and, where necessary, details of cladding, means of access and escape, details of interior padding and features to prevent continuous rolling and details of heating and ventilation,
- details of materials used in structural parts including attaching brackets and fixing bolts (see Annex V).

3.3. A tractor representative of the tractor type for which the protection structure to be approved is intended shall be submitted to the technical service responsible for conducting the component type-approval tests. This tractor shall be fitted with the protection structure.

3.4. The holder of EEC component type-approval may request its extension to other tractor types. The competent authority which has granted the original EEC component type-approval shall grant the extension if the approved protection structure and the type(s) of tractor for which the extension is requested comply with the following conditions:

- the mass of the unballasted tractor, as defined in 1.3 of Annex II, does not exceed by more than 5% the reference mass used in the test,
- the method of attachment and the tractor's components to which the attachments are made are identical,
- any components such as mudguards and bonnet cowls which may provide support for the protection structure are identical,
- the position and critical dimensions of the seat in the protection structure and the relative positions of the protection structure and the tractor shall be such that the zone of clearance would have remained within the protection of the deflected structure throughout all tests.

4. MARKINGS

4.1. Every protection structure conforming to the approved type shall bear the following markings:

4.1.1. the trade mark or name;

4.1.2. a component type-approval mark conforming to the model in Annex VI;

- 4.1.3. serial number of the protection structure;
- 4.1.4. Make and type(s) of tractor(s) for which the protection structure is intended.
- 4.2. All these particulars must appear on a small plate.
- 4.3. These markings must be visible, legible and indelible.

ANNEX IICONDITIONS FOR TESTING THE STRENGTH OF THE PROTECTION STRUCTURES AND
OF THEIR ATTACHMENT TO TRACTORS

1. GENERAL REQUIREMENTS

1.1. Test purposes

Tests made using special rigs are intended to simulate such loads as are imposed on the protection structure, when the tractor overturns. These tests, described in Annex III enable observations to be made on the strength of the protection structure and any brackets attaching it to the tractor and any parts of the tractor which transmit the test force.

1.2. Preparation for tests

1.2.1. The protection structure shall be in accordance with the series production specification. It shall be attached in accordance with the manufacturers' declared method of attachment to one of the tractors for which it is designed. A complete tractor is not required for the test; however, the protection structure and parts of the tractor for the tests on which it is attached shall represent for structural purposes an operating installation, subsequently described as the assembly, to ensure the integrity of the entire system.

1.2.2. The assembly shall be secured to the bedplate so that the members connecting the assembly and the bedplate do not deflect significantly in relation to the protection structure under loading. The assembly shall not receive any support under loading other than that due to the initial attachment.

1.2.3. The assembly must be supported and secured or modified so that all the test energy is absorbed by the protection structure and its attachment to the rigid components of the tractor.

1.2.3.1. To comply with the requirements of 1.2.3., the modification shall lock any vehicle ride suspension system so as to ensure that it does not absorb any of the test energy.

1.2.4. For the tests the tractor shall be fitted with all structural components of the series production which may influence the strength of the protection structure or which may be necessary for the strength test.

Components which may create a hazard in the zone of clearance must also be fitted so that they may be examined in accordance with the requirements of 4.1.

1.3. Tractor mass

The measured mass M , used in the formulae (see Annex III) to calculate the energies and the crushing force, shall be at least as defined in 2.4. of Annex I of the Council Directive 74/150/EEC (i.e. excluding optional accessories but including coolant, oils, fuel, tools and driver) plus the protection structure and less 75 kg.

Not included are optional front or rear weights, tyre ballast, mounted implements, mounted equipment or any specialised components.

2. APPARATUS AND EQUIPMENT

2.1. Horizontal loading tests:

Side and longitudinal.

2.1.1. Material, equipment and tie-down means adequate to ensure that the assembly is firmly fixed to the bedplate, independently of tyres if present.

2.1.2. Means for applying a horizontal force on the protection structure as shown in Figure 1 and 2 of Annex IV by a stiff beam.

2.1.2.1. The stiff beam shall have a vertical face dimension of 150 mm.

2.1.2.2. Provision will be made so that the load can be uniformly distributed normal to the direction of loading and along a beam length of not less than 250 mm nor more than 700 mm and exact multiples of 50 mm between these lengths.

2.1.2.3. The edges of the beam in contact with the protection structure shall be curved with a maximum radius of 50 mm.

2.1.2.4. Universal joints - or the equivalent - shall be incorporated to ensure that the loading device does not constrain the structure in rotation or translation in any direction other than the direction of loading.

2.1.2.5. Where the length of the protection structure projected from the appropriate load applying beam does not constitute a straight line normal to the direction of application of the load; the space shall be packed so as to distribute the load over this length.

- 2.1.3. Equipment for measuring force applied to the protection structure and its deflection relative to a point on the tractor chassis, such that as far as is reasonably practicable the energy measured is that absorbed by the protection structure and the rigid parts of the tractor to which it is attached.
- 2.1.4. Means for proving that the zone of clearance has not been entered during the test. A rig according to Figure 2 of Annex IV can be used.
- 2.2. Crushing tests:
Rear and front.
- 2.2.1. Material, equipment and tie-down means adequate to ensure that the tractor is firmly fixed to the bedplate, independently of tyres.
- 2.2.2. Means for applying a vertical force on the protection structure, such as shown in Figure 3 of Annex IV, including a stiff crushing beam with a width of 250 mm.
- 2.2.3. Equipment for measuring the total vertical force applied.
- 2.2.4. Means for proving that the zone of clearance has not been entered during the test. A rig according to Figure 2 of Annex IV can be used.
- 2.3. Tolerances
Measurements during the tests shall be made to the following tolerances:
- 2.3.1. Dimensions of the protection structure of the tractor and clearance zone ± 3 mm.
- 2.3.2. Deflection ± 3 mm.
- 2.3.3. Tractor mass ± 20 kg.
- 2.3.4. Load applied in horizontal and crushing tests $\pm 2\%$.

2.3.5. Direction of loading: deviation from horizontal and vertical directions specified in Annex III

- at start of test, under zero load $\pm 2^\circ$
- during test, under load $\pm 10^\circ$.

3. TESTS

3.1. General requirements

3.1.1. Sequence of tests

3.1.1.1. The sequence of tests shall be as follows. The clause numbers are those in which the tests are described in Annex III.

- | | |
|-------------------------|------|
| 1. Longitudinal loading | 1.2. |
|-------------------------|------|

For tractors with at least 50% of the mass as defined in 1.3 on the rear wheels the longitudinal loading shall be applied from the rear (Case 1). For other tractors the longitudinal loading shall be applied from the front (Case 2).

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|------------------------|--|
| 2. First crushing test | |
|------------------------|--|

The first crushing test shall be applied at the same end of the protection structure as the longitudinal loading, i.e.

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|----------------------------|------|
| at the rear in Case 1. | 1.5. |
| or at the front in Case 2. | 1.6. |

- | | |
|--------------------------|------|
| 3. Loading from the side | 1.3. |
|--------------------------|------|

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| 4. Second crushing test | |
|-------------------------|--|

The second crushing test shall be applied at the opposite end of the protection structure to the longitudinal loading, i.e.

- | | |
|---------------------------|------|
| at the front in Case 1. | 1.6. |
| or at the rear in Case 2. | 1.5. |

- | | |
|--------------------------------|------|
| 5. Second longitudinal loading | 1.7. |
|--------------------------------|------|

A second longitudinal loading shall be applied to tractors fitted with a protection structure designed to be tilted

when the longitudinal loading (see 1.) was not applied in the direction which would have tilted the protection structure.

- 3.1.1.2. If, during the test, any part of the restraining equipment breaks or moves, the test shall be repeated.
- 3.1.1.3. No repairs or adjustments to the tractor or protection structure may be carried out during the tests.
- 3.1.2. Wheel track width
- The wheels shall be removed or set at a track width setting which ensures that no interference occurs with the protection structure during the tests.
- 3.1.3. Removal of non-hazard creating components
- All components of the tractor and protection structure which, as complete units, constitute protection for the driver - including weather protection - shall be supplied complete on a tractor for inspection.
- It is permissible that the tractor which is to be tested is not fitted with front, side, rear windows of safety glass or similar material and any detachable panels, fittings and accessories which have no function of structural strength and which cannot create a hazard in the event of overturning.
- 3.1.4. Instrumentation
- The protection structure shall be instrumented with the necessary equipment to obtain the required force-deflection data, locations and direction specified in Figures 1 and 4 of Annex IV. Total and permanent protection structure deflection shall be measured and recorded for each part of the test (see Figure 5 of Annex IV).
- 3.1.5. Direction of loading
- In the case of a tractor whose seat is not on the median plane of the tractor and/or non symmetrical strength of the structure the side loading shall be on the side most likely to lead to infringement of the zone of clearance during the tests (See also Annex III, 1.3.).

4. INTERPRETATION OF RESULTS

4.1. A protection structure submitted for EEC component type-approval shall be considered as having satisfied requirements concerning strength if after the tests it fulfills the following conditions

4.1.1. It shall be free from fractures and cracks as described in 3.1. of Annex III.

4.1.2. No part of the zone of clearance as described in 3.2. of Annex III has been entered by - or has been outside the protection of the protection structure during the tests specified in 1.2., 1.3., 1.5., 1.6. and when appropriate 1.7. of Annex III.

If an overload test has been carried out, then, at the stage of that test when the specified energy is absorbed the force shall not be less than 0.8 of the maximum force occurring during both the main test and the overload test concerned (see Figure 4 b and 4 c. of Annex IV).

4.2. In addition there shall be no other feature presenting a particular hazard to the driver e.g. insufficient padding inside the roof or where the driver's head may strike.

5. TEST REPORT

5.1. The test report shall be attached to the EEC component type-approval certificate referred to in Annex VII. The presentation of the report shall be as shown in Annex V. The report shall include:

5.1.1. A general description of the protection structure's shape and construction (see Annex V for the obligatory dimensions), including the provisions for normal entry, exit and escape; the provisions for heating and ventilation system, and other accessories where these are available and where they could affect the zone of clearance or might create a hazard.

5.1.2. Details of any special features such as devices to prevent the continuous rolling of the tractor.

5.1.3. A brief description of any interior padding intended to minimise head or shoulders injuries or to effect noise reduction.

- 5.1.4. A statement of the type of windscreen and glazing fitted and of any EEC or other approval marking incorporated.
- 5.2. If EEC component type-approval is being extended for other tractor types, the report must include the exact reference of the report of the original EEC component type-approval as well as precise indications regarding the requirements laid down in 3.4. of Annex I.
- 5.3. The report must identify clearly the tractor type (make, type and commercial description etc.) used for testing and the types for which the protection structure is intended.

6. SYMBOLS

M	=	basic tractor mass, as defined in 1.3., in kilograms.
D	=	deflection (mm) of structure at the point of and in line with the load application.
D_{max}	=	total deflection (mm) of structure during static test corresponding to E.
D'	=	total deflection (mm) of structure in an overload test corresponding to E' .
F	=	static load force (N) (Newtons).
F_{max}	=	maximum static load force occurring during loading, (N)(Newtons).
F'	=	loading force corresponding to E_i , (N)(Newtons).
F-D	=	load-deflection diagram.
E_{is}	=	energy input to be absorbed during side loading, (J) (Joules).
$E_{il 1}$	=	energy input to be absorbed during longitudinal loading, (J) (Joules).
$E_{il 2}$	=	energy input to be absorbed during additional longitudinal loading, (J)(Joules).
F_r	=	applied force at rear in the crushing test (N) (Newtons)
F_f	=	applied force at front in the crushing test (N) (Newtons)
E_i	=	strain energy absorbed by the frame. Area under F-D curve (See Figure 4 a of Annex IV)
E'_i	=	strain energy absorbed by the frame after additional loading following a crack or tear (See Figure 4 b and 4 c of Annex IV.)
E_a	=	Strain energy absorbed by the frame at point when load is removed. Area contained within F-D curve (See Figure 4 b of Annex IV)
E''_i	=	strain energy absorbed by frame in overload test. Area under F-D curve. (See figure 4 c of Annex IV)

ANNEX III

TEST PROCEDURE

1. HORIZONTAL LOADING AND CRUSHING TESTS
 - 1.1. General provisions for horizontal loading tests
 - 1.1.1. The loads applied to the protection structure shall be distributed by means of a stiff beam 150 mm wide and not more than 700 mm long located normal to the direction of load application. The rate of deflection under loading shall not be greater than 5 mm/s. As the load is applied F and D shall be recorded simultaneously at deflection increments of 15 mm or less, to ensure accuracy. Once the initial application has commenced, the load shall not be reduced until the test has been completed; but it is permitted to cease increasing the load if desired, e.g. to record measurements.
 - 1.1.2. If the structural member to which the load is to be applied is curved, a beam or plate for applying the load may be provided. It shall, however, comply with the requirements of 1.1. so far as load application is concerned, and the requirements of 2.1.2. of Annex II. It may be equipped with a means for preventing it being displaced sideways due to the curvature of the structure.
 - 1.1.3. If no structural cross member exists at the point of application, a substitute test beam which does not add strength to the structure may be utilized to complete the test procedure.
 - 1.1.4. The structure shall be inspected when the load is removed after each loading test has been completed. If cracks or tears have occurred during loading, the overload test specified in 1.4. shall be carried out before proceeding to the next loading in the sequence given in 3.1.1.1. of Annex II.
 - 1.2. Longitudinal loading (see fig. 3 of Annex IV)

Load application shall be horizontal parallel to the vertical median plane of the tractor.

It shall be applied on the same side of the tractor as the side load.

It shall be applied to the uppermost transverse structural member of the protection structure (i.e. that part which would be likely to strike the ground in an overturning incident).

The point of application of the load shall be located 1/6th of the width of the top of the protection structure inwards from the outside corner. The width of the protection structure shall be taken as the distance between two lines parallel to the vertical median plane of the tractor touching the outside extremities of the protection structure in the horizontal plane touching the top of the uppermost transverse structural members.

The length of the beam shall be not less than 1/3 of the width of the protection structure (as previously described) and not more than 49 mm more than this minimum.

The longitudinal loading is applied from the rear or front as defined in 3.1.1.1. of Annex II.

Stop the test when:

- a) the strain energy absorbed by the protection structure is equal to or greater than the required energy input E_{iL} , where $E_{iL} = 1.4 M$.
- b) the structure infringes the zone of clearance or leaves the zone of clearance unprotected.

1.3. Loading from the side (see Figure 1 of Annex IV)

The loading shall be applied horizontally at 90° to the vertical median plane of the tractor. It shall be applied to the upper extremity of the protection structure at a point 300 mm forward of the seat reference point. If the protection structure has any projection on the side which would be certain to contact the ground first during a sideways overturn, the loading shall be applied at that point.

The length of the beam shall be not more than 700 mm but however it shall be as long as practicable.

Stop the test when:

- a) the strain energy absorbed by the protection structure is equal to or greater than the required energy input E_{iS} , where $E_{iS} = 1.75 M$.
- or b) the structure infringes the zone of clearance or leaves the zone of clearance unprotected.

1.4. Overload test

An overload test shall be carried out following a tear occurring during a horizontal loading test carried out in accordance with 1.2. and 1.3. but not 1.7.

This requirement does not arise in respect of tears not detrimental to the structural integrity of the protection structure, e.g. in a cladding panel. An increase in length of an existing tear, as well as a new tear commencing shall constitute a tear occurring.

The energy overload test shall in each case be related to the main horizontal test it follows.

Stop the test when the energy

$$E'_i = 1.20 E_i$$

E_i is E_{iL} when the overload follows a longitudinal loading and

E_i is E_{iS} when the overload follows a side loading.

E'_i is measured as the sum of the area contained within the force/deflection diagram of the original loading up to the point where the load is removed (E_a), and the total area under the force/deflection diagram of the overload test (E''_i) (See Figure 4 c of Annex IV).

At the point which E'_i is absorbed the force F' shall be not less than $0.8 F_{max}$, where F_{max} is the maximum force occurring in the force/deflection diagram.

Additional cracks or tears and/or entry into or lack of protection of the zone of clearance due to elastic deflection are permitted during the overload test.

1.5. Crushing at the rear

The beam shall be positioned across the rear uppermost structural members and the resultant of crushing forces shall be located in the vertical longitudinal reference plane. A force $F_r = 20 M$ shall be applied. Where the rear part of the protection structure roof will not sustain the full crushing force, the force shall be applied until the roof is deflected to coincide with the plane joining the upper part of the protection structure with that part of the rear of the tractor capable of supporting the vehicle's mass when overturned. The force shall then be removed, and the tractor or loading force repositioned so that the beam is over that point of the protection structure which would then support the tractor when completely overturned and the full force applied.

The force F_r shall be applied for a minimum of five seconds following the cessation of visually detectable deflection.

Stop the test if the structure infringes the zone of clearance or leaves the zone of clearance unprotected.

1.6. Crushing at the front

The beam shall be positioned across the front uppermost structural members and the resultant of crushing forces shall be located in the vertical longitudinal reference plane. A force $F_f = 20 M$ shall be applied.

Where the front part of the protection structure roof will not sustain the full crushing force, the force shall be applied until the roof is deflected to coincide with the plane joining the upper part of the protection structure with that part of the front of the tractor capable of supporting the vehicle's mass when overturned. The force shall then be removed, and the tractor or loading force repositioned so that the beam is over that point of the protection structure which would then support the tractor when completely overturned and the full force applied.

The force F_f shall be applied for a minimum of five seconds following the cessation of the visually detectable deflection.

Stop the test if the structure infringes the zone of clearance or leaves the zone of clearance unprotected.

1.7.

Second longitudinal loading

Load application shall be horizontal parallel to the vertical median plane of the tractor.

It shall be applied in the opposite direction to and at the corner furthest from the longitudinal loading in 1.2.

It shall be applied to the uppermost transverse structural member of the protection structure (i.e. that part which would be likely to strike the ground in an overturning incident).

The point of application of the load shall be located 1/6th of the width of the top of the protection structure inwards from the outside corner. The width of the protection structure shall be taken as the distance between two lines parallel to the vertical median plane of the tractor touching the outside extremities of the protection structure in the horizontal plane touching the top of the uppermost transverse structural members.

The length of the beam shall be not less than 1/3 of the width of the protection structure (as previously described) and not more than 49 mm more than this minimum.

If the structural member to which the load is to be applied is curved, a beam or plate for applying the load may be provided. It shall, however, comply with the requirements of 1.1. so far as load application is concerned, and the requirements of 2.1.2. of Annex II. It may be equipped with a means for preventing it being displaced sideways due to the curvature of the structure.

The second longitudinal loading is applied from the rear or front as defined in 3.1.1.1. of Annex II. If from the front, it shall be applied on the same side of the centreline as that on which

the side load is applied. If no structural cross member exists at the point of application, a substitute test beam which does not add strength to the structure may be utilized to complete this test procedure.

Stop the test when:

- a) the strain energy absorbed by the structure is equal to or greater than the required energy input E_{il} , where
 $E_{il2} = 0,35 M.$
- b) the structure infringes on the zone of clearance or leaves the zone of clearance unprotected.

2. Zone of clearance

- 2.1. The zone of clearance is illustrated in Figure 6 of Annex IV and is defined in relation to a vertical reference plane generally longitudinal to the tractor and passing through a seat reference point, described in 2.3., and the centre of the steering wheel. The reference plane shall be assumed to move horizontally with the seat and steering wheel during loading but to remain perpendicular to the floor of the tractor or of the protection structure if this is resiliently mounted.

Where the steering wheel is adjustable, its position should be that for normal seated driving.

- 2.2. The boundaries of the zone shall be taken as:

- 2.2.1. Vertical planes 250 mm on either side of the reference plane extending upwards from the seat reference point for 300 mm.
- 2.2.2. Parallel planes extending from the upper edge of plane 2.2.1. to a maximum height of 900 mm above the seat reference point and inclined in such a way that the upper edge of the plane on the side from which the side loading is applied is at least 100 mm from the reference plane.
- 2.2.3. A horizontal plane 900 mm above the seat reference point.
- 2.2.4. An inclined plane perpendicular to the reference plane and including a point 900 mm directly above the seat reference point and the rearmost point of the seat backrest.

- 2.2.5. A plane perpendicular to the reference plane extending downwards from the rearmost point of the seat in contact with the seat backrest throughout its length.
- 2.2.6. A curvilinear surface, perpendicular to the reference plane, with a radius of 120 mm tangential to planes 2.2.3. and 2.2.4.
- 2.2.7. A curvilinear surface, perpendicular to the reference plane, having a radius of 900 mm extending forward for 400 mm from and tangential to plane 2.2.3. at a point 150 mm forward of the seat reference point.
- 2.2.8. An inclined plane perpendicular to the reference plane, joining surface 2.2.7. at its forward edge and passing 40 mm from the steering wheel. In the case of a high steering wheel position this plane is replaced by a tangent plane to the surface 2.2.7.
- 2.2.9. A vertical plane, perpendicular to the reference plane, 40 mm forward of the steering wheel.
- 2.2.10. A horizontal plane through the seat reference point.
- 2.3. Seat location and seat reference point
- 2.3.1. For the purpose of defining the zone of clearance in 2.1. the seat shall be at the rearmost point of any horizontal adjustment range. It shall be set at the mid point of the vertical adjustment range where this is independent of adjustment of its horizontal position. The reference point shall be established using the apparatus illustrated in Annex IV, Figures 7 and 8 to simulate loading by a human occupant.
- The apparatus shall consist of a seat pan board and backrest boards. 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.
- 2.3.2. The reference point is defined as the point in the median 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 above-mentioned tangent.
- 2.3.3. Where a seat suspension is provided with adjustment for the weight of the driver, this shall be set so that the seat is at mid point of its dynamic range. The apparatus shall be positioned on the seat. It shall then be loaded with a force

of 550 N at a point 50 mm in front of joint (A), and the two parts of the backrest board shall be lightly pressed tangentially against the backrest.

2.3.4. If it is not possible to determine definite tangents to each area of the backrest (below and above lumbar region) the following should be done:

2.3.4.1. Where no definite tangent to the lower area is possible:
The lower part of the backrest board is pressed against the backrest vertically.

2.3.4.2. Where no definite tangent to the upper area is possible:
The joint (B) is fixed at a height which is 230 mm above the seat reference point, if the lower part of the backrest board is vertical. Then the two parts of the backrest board are lightly pressed against the backrest tangentially.

3. Controls and measurements to be made

3.1. Fractures and cracks

All structural members, joints, attaching brackets and parts of the tractor which transmit the loading force shall be free from fractures or cracks detectable by visual inspection, except in the two following cases:

- the last crushing test (Test 4 in 3.1.1.1. of Annex II)
- the overload test carried out as in 1.4.

Spot or tack welding used for the attachment of cladding panels shall not be considered as affecting the integrity of the protection structure and failures of them shall not constitute either a requirement for an overload test or non-compliance in respect of freedom from fracture and cracks.

Tears not detrimental to the structural integrity of the protection structure are permitted.

3.2. Zone of clearance

During each test the protection structure shall be examined to see whether any part of the protection structure has entered a zone of clearance round the driving seat as defined in 2.1..

In addition, the protection structure shall be examined to determine whether any part of the zone of clearance is outside the protection of the protection structure. For this purpose, it shall be considered to be outside the protection of the protection structure if any part of it would have come into contact with flat ground if the tractor had overturned towards the direction from which the loading was applied.

3.3. Permanent deflection

After the final crushing test the permanent deflection of the protection structure shall be recorded. For this purpose, before the start of the test, the position of the main protection structure members in relation to the seat reference point shall be recorded.

ANNEX IV

FIGURES

- Fig. 1. Side load application.
- Fig. 2. Front and rear load applications.
- Fig. 3. Example of an arrangement for crushing test.
- Fig. 4 a. Energy absorbed in normal loading = E_i
- Fig. 4 b. Final energy absorbed in normal loading = E_a
- Fig. 4 c. Total energy absorbed after overload test, $E'_i = E_a + E''_i$.
- Fig. 5. Illustration of the terms: permanent, elastic and total deflection
- Fig. 6 a. Clearance zone from side.
- Fig. 6 b. Clearance zone from front/rear 150 mm in front of the seat reference point.
- Fig. 7. Apparatus for determination of seat reference point.
- Fig. 8. Method of determining seat reference point.

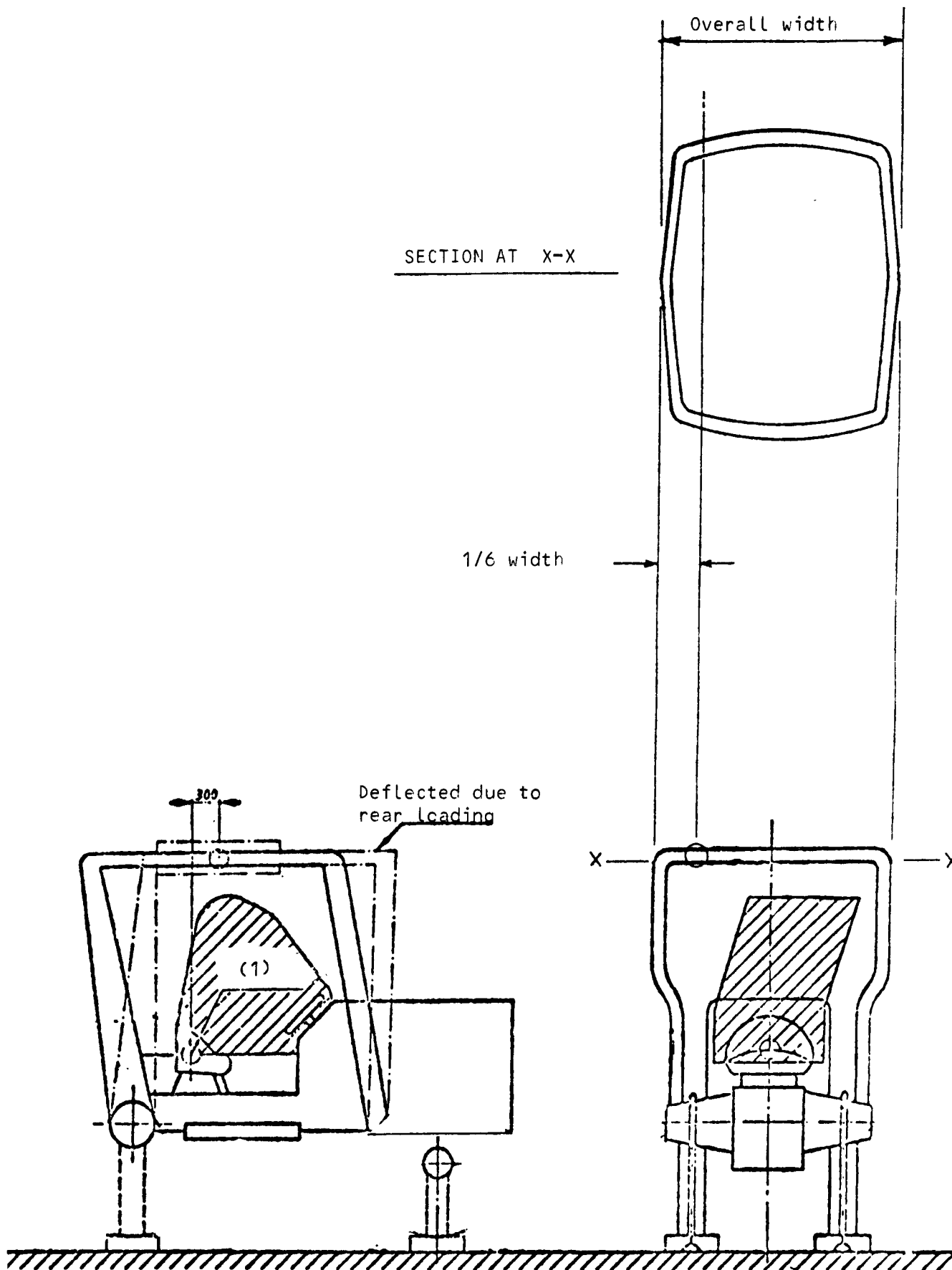


FIG. 1- POINT OF APPLICATION OF SIDE LOADING
(1) Seat reference point

FIG. 2- POINT OF APPLICATION OF LONGITUDINAL LOADING

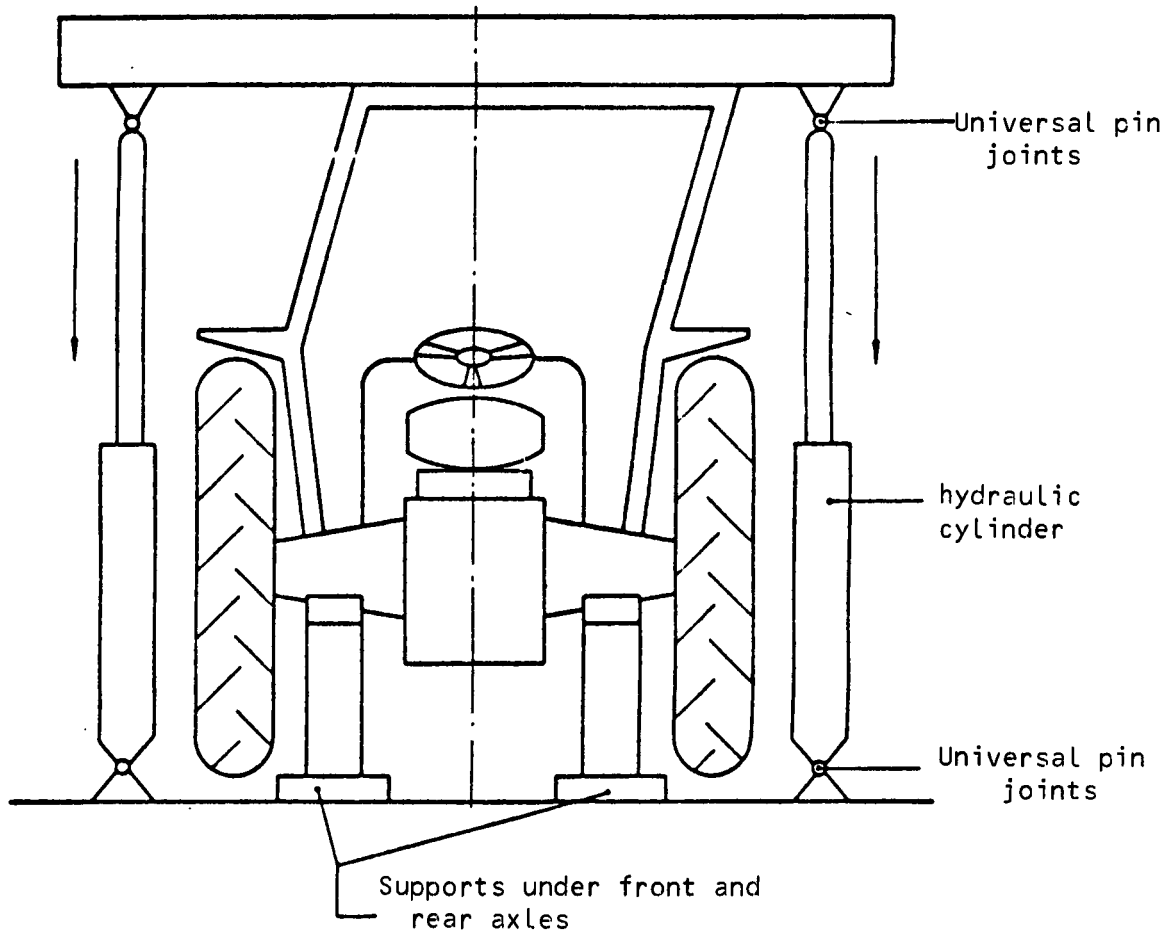


FIG. 3 - Example of an arrangement for crushing test

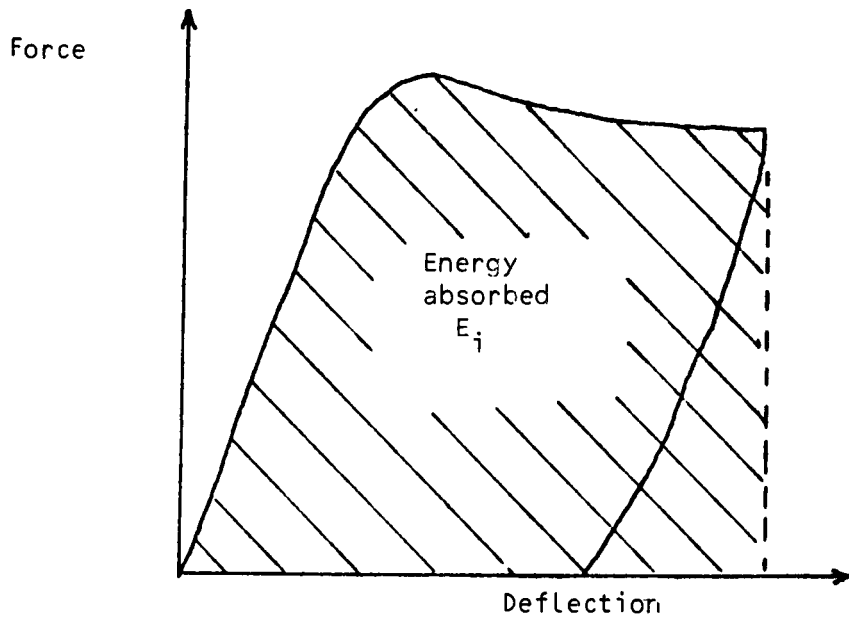


FIG. 4a Energy absorbed in normal loading = E_i

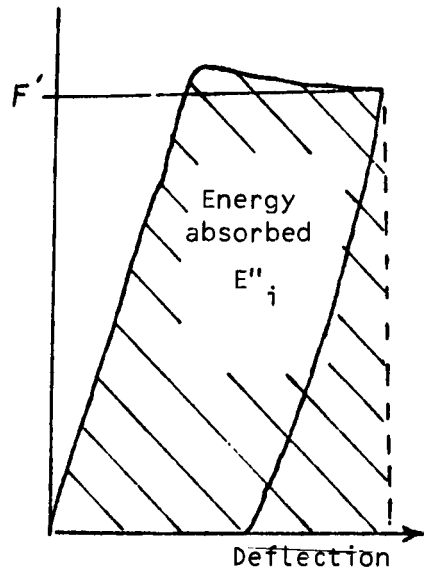
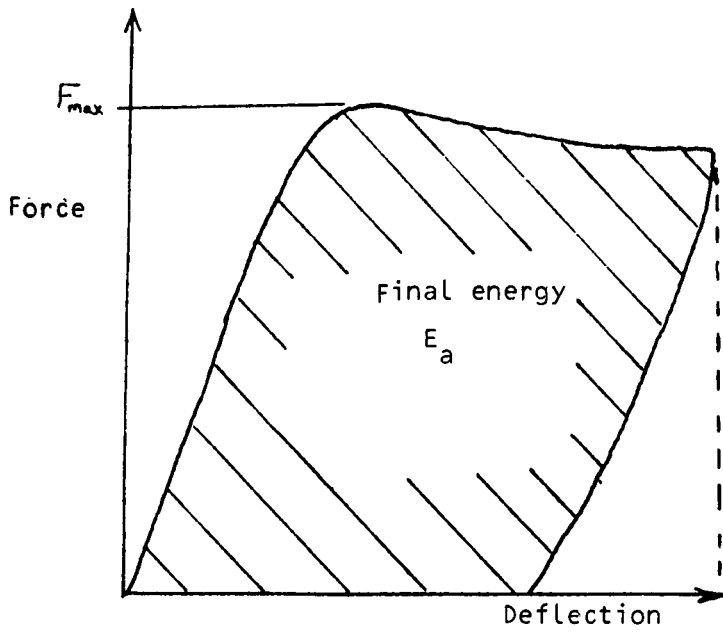


FIG. 4b Normal loading (as Fig. 4a) FIG. 4c Overload test
 Total energy absorbed after overload test, $E'_i = E_a + E''_i$

- 1: Permanent deflection
- 2: Elastic deflection
- 3: Total (permanent plus elastic) deflection

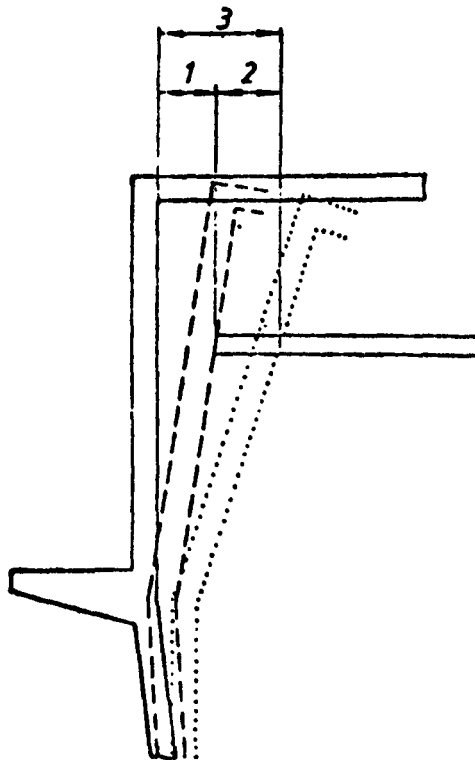
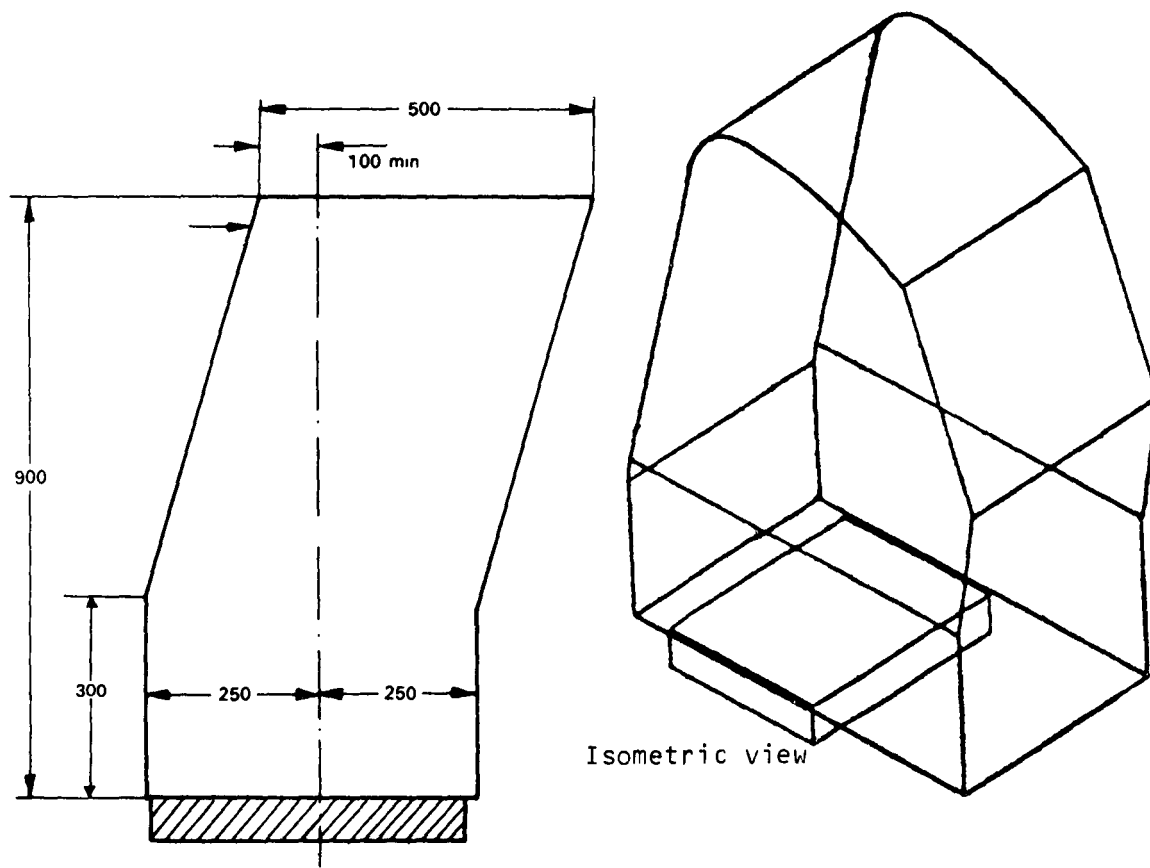
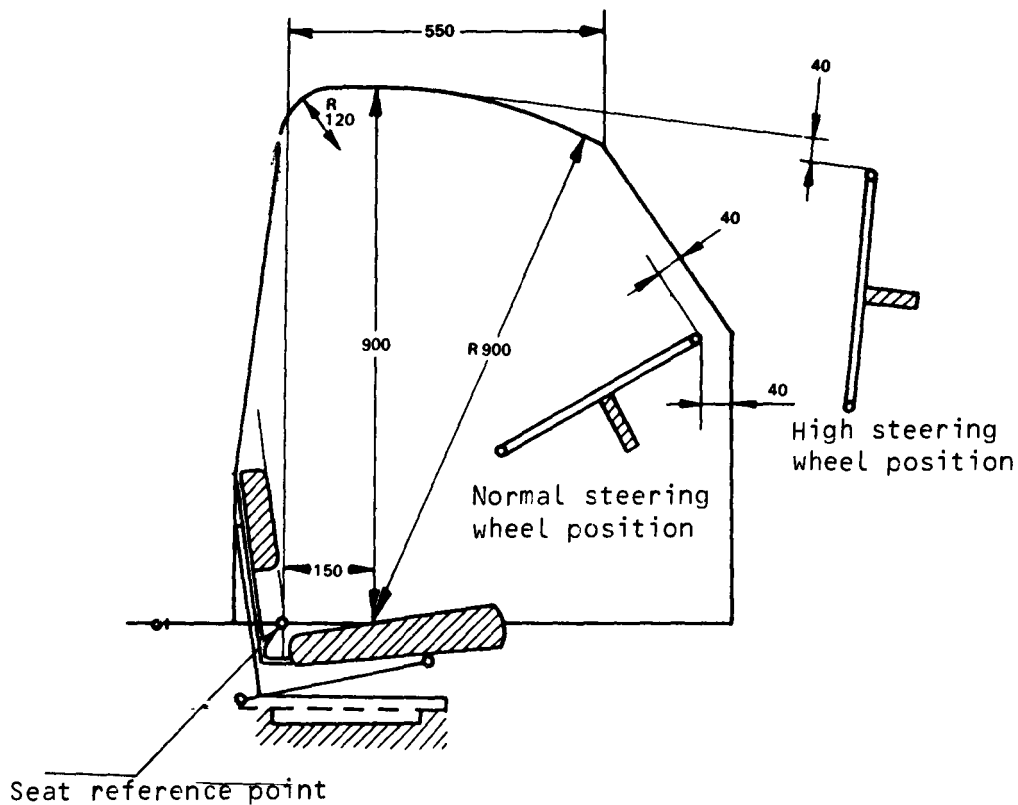


FIG. 5 Illustration of the terms permanent, elastic and total deflection



Dimensions in millimetres

FIG. 6 Zone of clearance

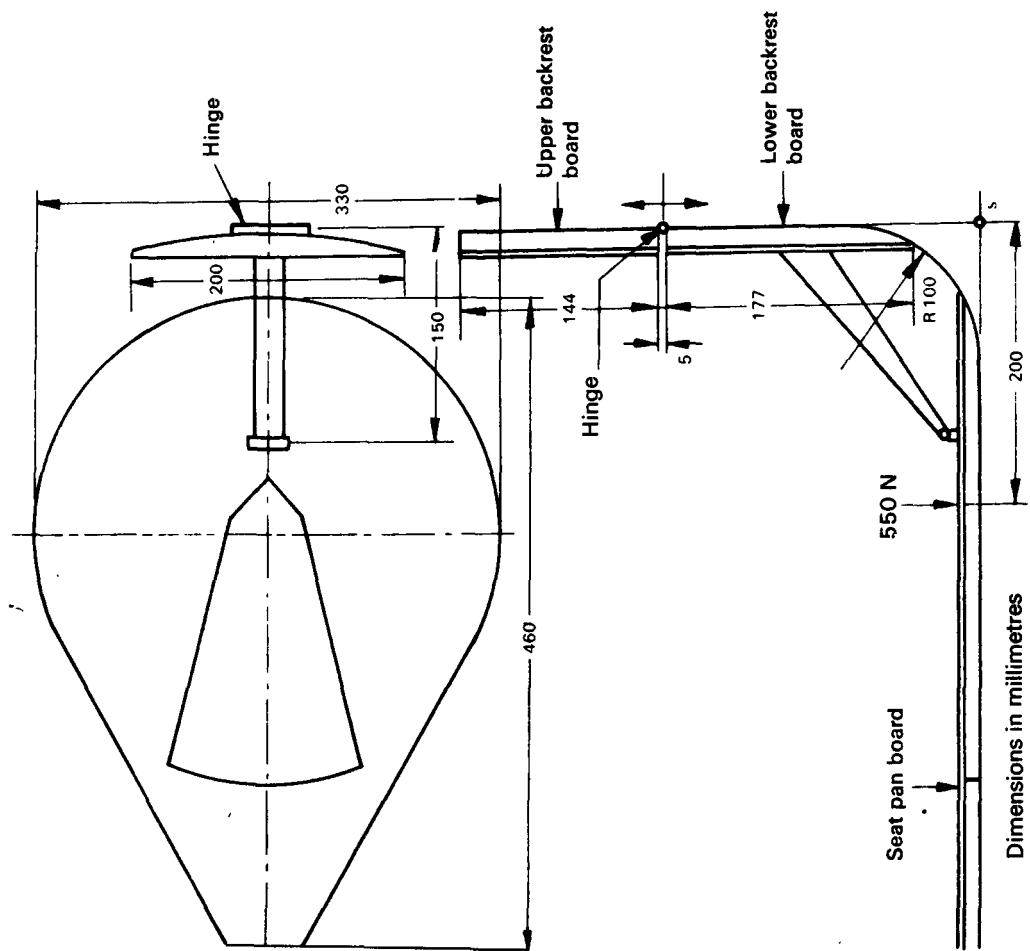


Fig. 7

Apparatus for determination of seat reference point

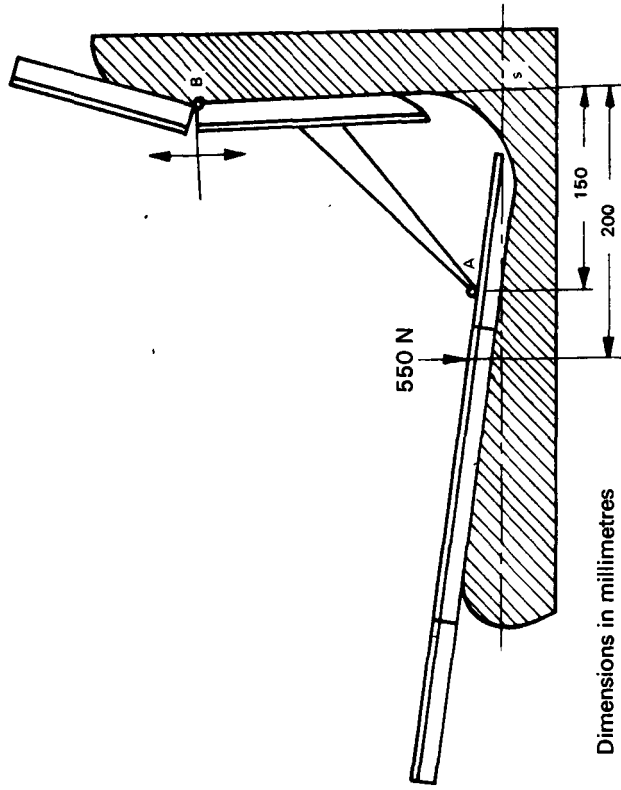


Fig. 8

Method of determining seat reference point

ANNEX V

MODEL

REPORT RELATING TO THE EEC COMPONENT TYPE-APPROVAL TEST OF A PROTECTION STRUCTURE (SAFETY FRAME OR CAB) WITH REGARD TO ITS STRENGTH AS WELL AS TO THE STRENGTH OF ITS ATTACHMENT TO THE TRACTOR

Protection structure	
Make	
Type	
Tractor make	
Tractor type	

Identification of test station

EEC component type-approval No

1. Trade mark or name of protection structure

2. Name and address of manufacturer of tractor or protection structure

3. If applicable, name and address of tractor or protection structure manufacturer's authorized representative

4. Specifications of tractor on which the tests are carried out

4.1. Trade mark or name

4.2. Type and commercial description

4.3. Serial number

4.4. Mass of unballasted tractor with protection structure fitted, without driverkg

4.5. Tyre sizes: front
rear

5. Extension of EEC component type-approval for other tractor types

5.1. Trade mark or name

- 5.2. Type and commercial description
- 5.3. Mass of unballasted tractor, with roll-over protection structure fitted, without driver.....kg

- 5.4 Tyre sizes: front
- rear

- 6. Specifications of protection structure

 - 6.1. General arrangement drawing of both the protection structure and its attachment to the tractor
 - 6.2. Photographs from side and rear showing mounting details
 - 6.3. Brief description of protection structure including type of construction, details of mounting on the tractor, details of cladding, means of access and escape, details of interior padding, features to prevent continuous rolling and details of heating and ventilation
 - 6.4. Dimensions
 - 6.4.1. Height of roof members above the seat reference point
 - mm
 - 6.4.2. Height of roof members above the tractor foot platform
 - mm
 - 6.4.3. Interior width of the protection structure at 900 mm above the seat reference point
 - mm
 - 6.4.4. Interior width of the protection structure at a point above the seat at the height of the centre of the steering wheel
 - mm
 - 6.4.5. Distance from the centre of steering wheel to the right-hand side of protection structure
 - mm
 - 6.4.6. Distance from the centre of the steering wheel to the left-hand side of protection structure
 - mm
 - 6.4.7. Minimum distance from the steering wheel rim to the protection structure.....mm
 - 6.4.8. Width of the doorways:
 - at the top
 - mm
 - in the middle
 - mm
 - at the bottom
 - mm
 - 6.4.9. Height of the doorways:
 - above foot platform
 - mm

- above highest mounting step mm
- above lowest mounting stepmm
- 6.4.10. Overall height of the tractor with the protection structure fitted mm
- 6.4.11. Overall width of the protection structure mm
- 6.4.12. Horizontal distance to the rear of the protection structure
from the seat reference point at a height of 900 mm (1)
..... mm

6.5. Details and quality of materials used, standards used

- Main frame(material and dimensions)
- Mountings (material and dimensions)
- Cladding (material and dimensions)
- Roof(material and dimensions)
- Interior padding(material and dimensions)
- Assembly and mounting bolts(grade and dimensions)

Type of windscreen and glazing and details
of marking

7. Test results

7.1 Horizontal loading and crushing tests

Loading tests were made to the left/right hand (') rear and to the right/left hand (') front and right/left hand side (')

The reference mass used for calculating energy input and crushing forces waskg

The test requirements concerning fractures or cracks and the zone of clearance were satisfactorily fulfilled

7.2 Loading energies (kJ): rear/front
side

Crushing force (kN):

Second longitudinal loading (kJ). A second longitudinal loading test was made to the right/left hand front/rear

(1) Delete where inapplicable

7.3 Deflection measured after the tests

Permanent deflection:

Rear; forwards/backwards

left-hand mm

right-hand mm

Front: forwards/backwards

left-hand mm

right-hand mm

side sideways:

front mm

rear mm

top downwards/upwards:

front mm

rear mm

8. Report number

9. Report date

10. Signature

ANNEX VI

MARKS

The EEC component type-approval mark shall consist of a rectangle surrounding the lower-case letter 'e' followed by the distinguishing letter(s) or number of the Member State which has granted the component type-approval:

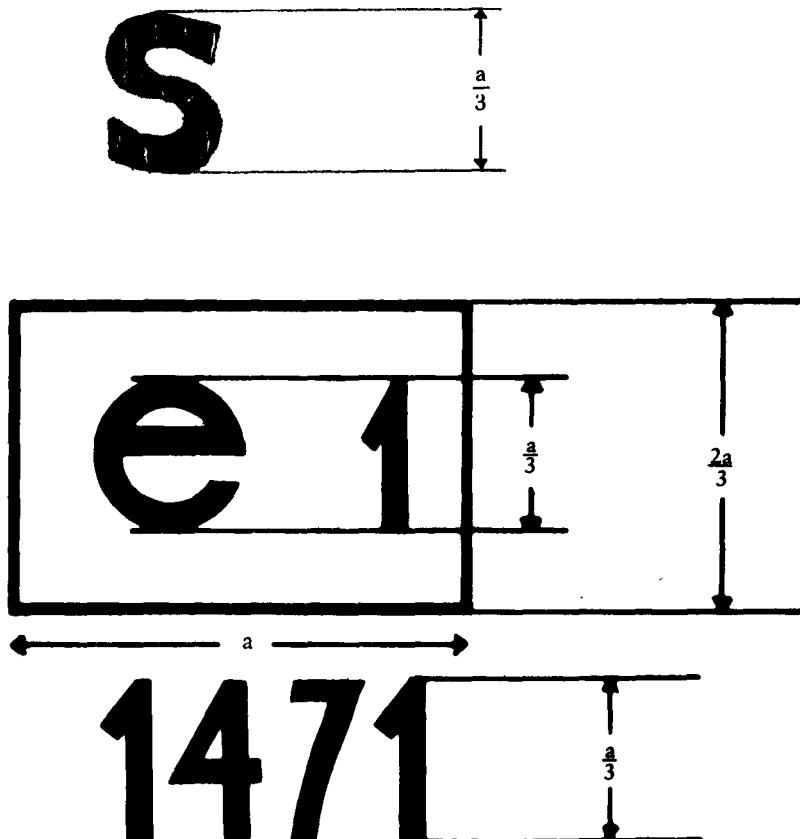
- 1 for Germany,
- 2 for France,
- 3 for Italy,
- 4 for the Netherlands,
- 6 for Belgium,
- 11 for the United Kingdom,
- 13 for Luxembourg,
- 18 for Denmark,
- IRL for Ireland.

It must also include in the vicinity of the rectangle the EEC component type-approval number which corresponds to the number of the EEC component type-approval certificate issued with regard to the strength of the type of protection structure and its attachment to the tractor.

Example of an EEC component type-approval mark

The EEC component type-approval mark shall be supplemented by an additional symbol 'S'

$a \geq 30 \text{ mm}$



The protection structure bearing the EEC component type-approval mark shown above is a structure for which EEC component type-approval was granted in Germany (e 1) under the number 1471.

ANNEX VII

MODEL

EEC COMPONENT TYPE-APPROVAL CERTIFICATE

Name of competent authority

Notification concerning the granting, refusal, withdrawal or extension of EEC component type-approval with regard to the strength of a protection structure (safety cab or frame) and to the strength of its attachment to the tractor
STATIC TESTING

EEC component type-approval No extension (1)

- 1. Trade name or mark of protection structure
2. Name and address of manufacturer of protection structure
3. If applicable, name and address of authorized representative of manufacturer of protection structure
4. Trade mark or name, type and commercial description of tractor for which protection structure is intended
5. Extension of EEC component type-approval for the following tractor type(s)
5.1. The mass of the unballasted tractor, as defined in 1.3 of Annex II, exceeds/does not exceed(2) the reference mass used for the test by more than 5%.
5.2. The method of attachment and points of attachment are/are not (2) identical.
5.3. All the components likely to serve as supports for the protection structure are/are not (2) identical.
6. Submitted for EEC component type-approval on
7. Test station
8. Date and number of the report of the test station
9. Date of granting/refusal/withdrawal of EEC component type-approval (2)
10. Date of granting/refusal/withdrawal of the extension of EEC component type-approval (2)
11. Place
12. Date
13. The following documents, bearing the component type-approval number shown above, are annexed to this certificate (e.g. report of the test station)
14. Remarks, if any
15. Signature

(1) If applicable, state whether this is the first, second, etc. extension of the original EEC component type-approval.
(2) Delete where inapplicable.

ANNEX VIII

CONDITIONS FOR EEC TYPE-APPROVAL

1. The application for EEC type-approval of a tractor, with regard to the strength of a protection structure and the strength of its attachment to the tractor shall be submitted by the tractor manufacturer or by his authorized representative.
 2. A tractor representative of the tractor type to be approved, on which a protection structure and its attachment, duly approved, are mounted, shall be submitted to the technical services responsible for conducting the type-approval tests.
 3. The technical service responsible for conducting the type-approval tests shall check whether the approved type of protection structure is intended to be mounted on the type of tractor for which the type-approval is requested. In particular, it shall ascertain that the attachment of the protection structure corresponds to that which was tested when the EEC component type-approval was granted.
 4. The holder of the EEC type-approval may ask for its extension for other types of protection structures.
 5. The competent authorities shall grant such extension on the following conditions:
 - 5.1. the new type of protection structure and its tractor attachment have received EEC component type-approval;
 - 5.2. it is designed to be mounted on the type of tractor for which the extension of the EEC type-approval is requested;
 - 5.3. the attachment of the protection structure to the tractor corresponds to that which was tested when EEC component type-approval was granted.
 6. A certificate, of which a model is shown in Annex IX, shall be annexed to the EEC type-approval certificate for each type-approval or type-approval extension which has been granted or refused.
 7. If the application for EEC type-approval for a type of tractor is introduced at the same time as the request for EEC component type-approval for a type of protection structure intended to be mounted on the type of tractor for which EEC type-approval is requested, the checks laid down in 2 and 3 will not be made.
-

ANNEX IX

MODEL

Name of competent authority

ANNEX TO THE EEC TYPE-APPROVAL CERTIFICATE FOR A TRACTOR TYPE WITH REGARD TO THE STRENGTH OF PROTECTION STRUCTURES (SAFETY CAB OR FRAME) AND THE STRENGTH OF THEIR ATTACHMENT TO THE TRACTOR STATIC TESTING

(Articles 4 (2) and 10 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)

- EEC type-approval No extension (1)
1. Trade name or mark of tractor
2. Tractor type
3. Name and address of tractor manufacturer
4. If applicable, name and address of manufacturer's authorized representative
5. Trade name or mark of protection structure
6. Extension of EEC type-approval for the following type(s) of protection structure
7. Tractor submitted for EEC type-approval on
8. Technical service responsible for EEC type-approval conformity control
9. Date of report issued by that service
10. Number of report issued by that service
11. EEC type-approval with regard to the strength of the protection structures and the strength of their attachment to the tractor has been granted/refused (2)
12. The extension of the EEC type-approval with regard to the strength of the protection structures and the strength of their attachment to tractor has been granted/refused (2)
13. Place
14. Date
15. Signature

(1) If applicable, state whether this is the first, second, etc. extension of the original EEC type-approval.
(2) Delete where inapplicable.