

Instructions for use and maintenance

(Translation of the original instructions for use and maintenance, AWA)


Rescue Triangle Model TYRAH AR

CE NB 0511 EN 1498 B

EC Type certificate n° BMB 2012-3530 – EC directive 89/686/EEC on PPE

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EASA CS-27./29.865, CM-CS-005 simple PCDS / EC Decision 2014/018/R, AMC1 SPO.SPEC.HEC.100

Revision D – what is new or has been modified? Watch this symbol: 



Please make sure you have the latest version of these instructions AWA.
Check "www.air-work.com, Equipment/User Guides" for the latest updated version.


Use

Correct use

The TYRAH AR rescue triangle is a rescue device in conformity with the European standard EN 1498 B (rescue loops). To access its full functionality, the 3 loops of the TYRAH AR must be assembled in a karabiner (EN 362) and connected to another PPE (connecting devices/connectors).

Due to its special construction, the unisize TYRAH AR can be employed for persons with a weight ranging from 20 kg (approx. 4 years old) to 150 kg.

TYRAH AR can be employed on both sides (inside and outside), as long as care is taken in placing the yellow strap horizontally around the shoulders/back.

Small persons must be entirely surrounded by the rescue triangle, i.e. their arms must be put inside the cloth. For additional safety, the  grip straps can be secured by attaching them with two karabiners to the left and right side of the crotch strap.

In case of heavy or particularly large persons, an oppressive constraint in the breast/armpit/shoulder area could be inevitable.

Special properties

- Its particular design features completely exclude any constriction/contusion in the crotch area which can often occur with conventional rescue triangles.
- TYRAH AR is particularly suitable for rescue operations of a longer duration (crevasse and cave rescue), since a length of stay of 20 and more minutes in the triangle can be handled without difficulty.

Personnel assigned to using this device must have adequate instruction and training prior to its first use. During the introduction to its use and subsequent in-depth training, particular stress should be placed on gaining a good knowledge of the present instructions for its use and maintenance.

Training has to be repeated at least once a year and proof of this must be demonstrable. Please document the type, amount and the date of training in an appropriate way.

View: open and closed triangle, triangle in use

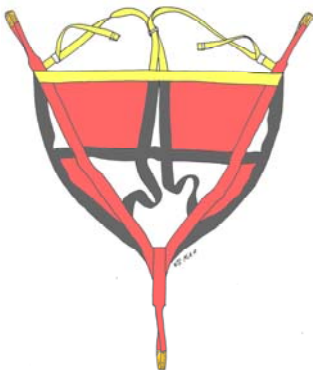


Fig 1: Open TYRAH AR rescue triangle

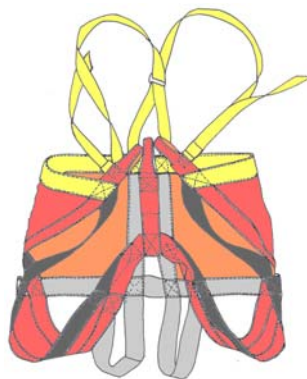


Fig. 2 Closed TYRAH AR rescue triangle



Fig. 3: The TYRAH AR in use – highly ergonomic and comfortable



The TYRAH AR triangle is a rescue device approved by the German Armed Forces for CH-53 helicopter rescue winches (hoists).



Labels must not be removed. A product without label cannot be considered safe. If you have any questions, please contact the producer.



No kind of instructions for use and maintenance, including this AWA, can ever be complete or exhaustive. In case of any doubts please contact the producer.

Range of applications (examples)

- Air rescue
- Rescue from heights and depths (fire brigade, rope work, mountain rescue, etc.)
- crevasse and cave rescue



Fig. 1: Side and back view, adults

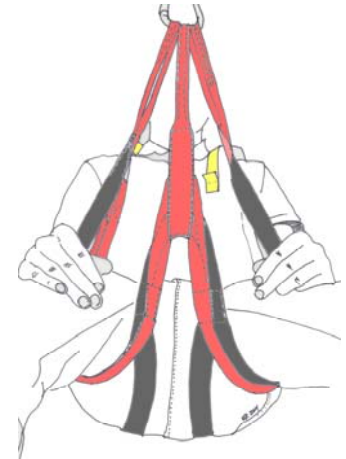
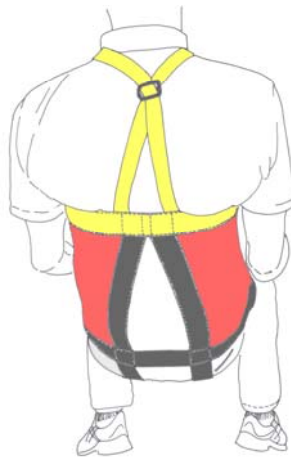


Fig. 2 and 3: Sufficient room in the crotch/bottom area avoids constriction/contusion



Fig. 4: Children, from their 4th year/ 20kg



Fig. 5: Normal sitting position



Fig. 6: 10 cm lengthening of crotch strap with a karabiner = slightly more upright sitting position

Upgrade with bottom reinforcement strap

Concerns have been raised during practical use that very small or thin persons may have the sensation of “slipping” out of the triangle.

This is virtually impossible but, to enhance the feeling of safety when using the device, the TYRAH AR rescue triangle can be upgraded with a reinforcement strap connecting the two bottom belts.

This reinforcement strap is sewn onto one of the two bottom belts, while it is wound around the other and fixed by means of a Velcro fastener.



Fig. 7: Reinforcement



Fig. 8: View of triangle including bottom reinforcement strap



The reinforcement strap is not a bearing component and thus not subject to type approval.

Order numbers

- TYRAH AR = standard design without reinforcement strap
- TYRAH AR-S = upgraded version including reinforcement strap
- TYRAH AR-Steg = modification set for upgrading the standard design



The TYRAH AR is designed to be used only and exclusively in the above mentioned way, that is as a rescue device for human beings.

Restriction

Any transport of children or adolescents, as well as injured people or persons with compromised physical capacity, must, compulsorily, be carried out in the presence of a rescuer/doctor.

Utilisation requires training

Special operation modes

The term "special operation modes" covers all operations necessary to guarantee safe handling within the normal operation mode, in particular:

- Planning and construction, production, testing and function control, assembly and disassembly, transport, storage, preliminary procedures, repackaging, installation and removal, connection with other components, maintenance, repair, disposal.

All of the above mentioned special operation modes influence the device's functioning during its correct use. All persons involved in special operation modes must undergo specific training (technical experts).

In the case of lending, demonstration, display, sale, discount trading or user training, these instructions for use and maintenance (AWA) must be enclosed/attached.

The product and its construction

Construction

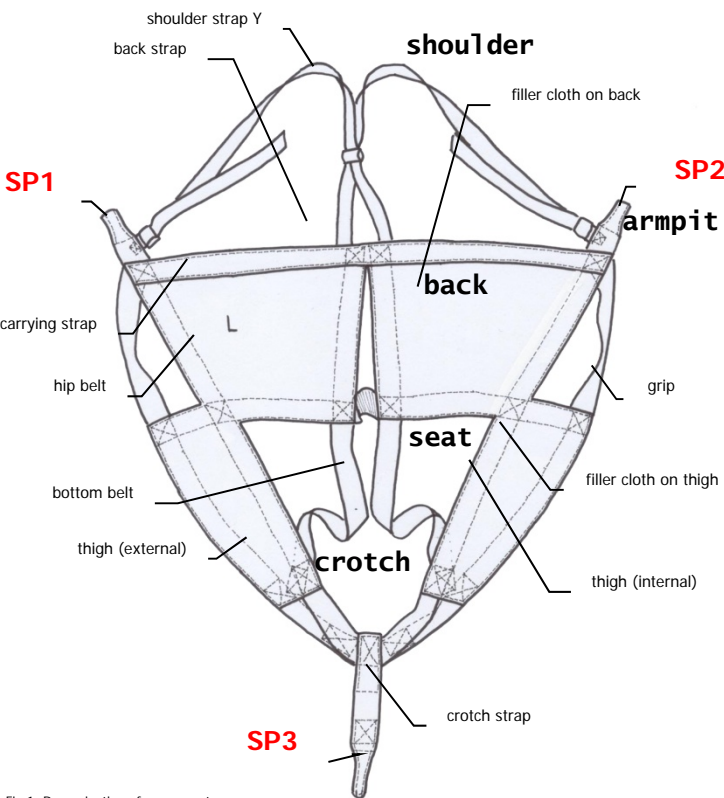
The TYRAH AR rescue triangle is manufactured from proven and tested polyester materials (PES).

All load bearing straps, as well as the 3 slinging points (SP), are in red. The bearing horizontal back strap is yellow and connects slinging points 1 and 2.

The cloth around back and thighs is in red and performs only a limited load-bearing function.

The yellow shoulder straps have no load-bearing function and serve only for fixation of the rescue triangle when putting equipment on and for stabilisation of the back.

There are no exchangeable components.



Technical data	
• Maximum size	100 x 100 cm +/- 4 cm
• Service temperature	from - 80°C to + 80°C
• Material	polyester (PES)
• Weight (without karabiner)	760 grams



Fig.1: Denomination of components

Fig. 2: View of triangle including bottom reinforcement strap

Upgrade with bottom reinforcement strap



Fig. 3: Reinforcement strap sewn onto left bottom belt

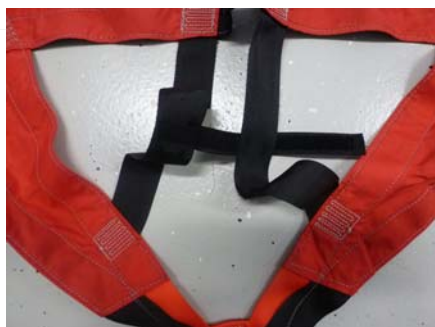


Fig. 4: Place the reinforcement strap under the right bottom belt



Fig. 5: Close the reinforcement strap by means of the Velcro fastener

Assembly

1. Pull the shoulder straps to approx. 3 cm from the stopping point.
2. The yellow strap should protrude by approximately 2–3 cm (this way it can be grasped more easily when wearing gloves).
3. If necessary, close the bottom reinforcement strap.
4. Place the shoulder straps over the shoulders; place the yellow back strap around the shoulder blades, then pass it under the armpits to the chest.
5. Pass crotch strap to the chest.
6. Take the 3 slinging points (SP1 – SP3) in their right order into one hand.
7. Rig the 3 slinging points (SP1 – SP3) to a karabiner, placing the crotch strap in the middle.
8. Once the patient is seated in the rescue triangle, the posture of their upper body can be adjusted by tightening the shoulder straps.

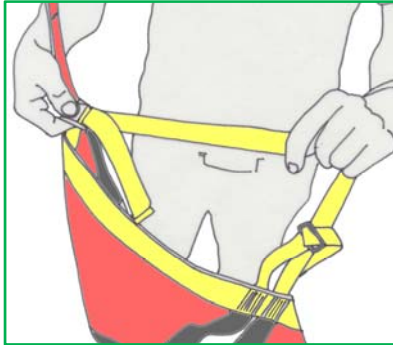


Fig. 1: Press the buckle

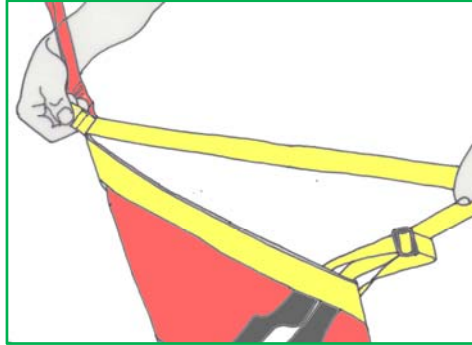


Fig. 2: Pull the strap to approximately 3 cm from the stopping point

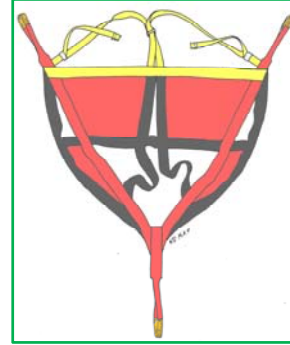


Fig. 3: Close the reinforcement strap, if necessary



Fig. 4: Place the strap over the shoulder



Fig. 5: Pass crotch strap to the chest

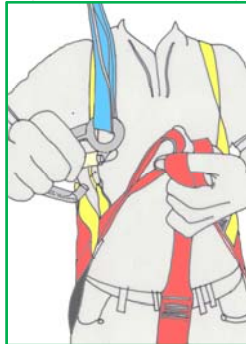


Fig. 6: Take the 3 slinging points in their right order...

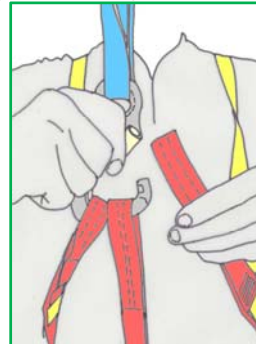


Fig. 7: ...and rig them to the karabiner

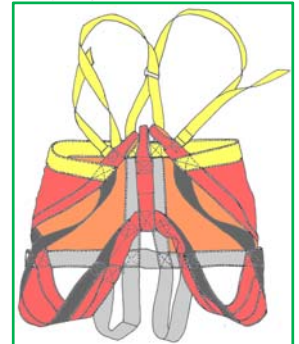



Fig. 8: All straps must be evenly positioned

In case of small persons (> 20 kg/4 years) please observe:

9. The patients' arms must be placed inside the rescue triangle.
10. Close the reinforcement strap before placing the yellow strap over the shoulder (see fig.3).
11. If necessary (risk assessment by rescuer/doctor), attach the two  grip straps with two karabiners to either side of the crotch strap.


The two sides of the rescue triangle ("internal"/"external") are of identical construction, but only on one side are all straps visible.

Preliminary procedures

Check the TYRAH AR for its functional efficiency and intactness.

Restoration/ repackaging

Check the TYRAH AR for its functional efficiency and intactness.

Pull the yellow shoulder straps back to their original position  up to approximately 3 cm from the stopping point.



WARNING

Open/damaged seams, disrupted cloth = deliver product to repair service

Interfaces

Interfaces to other PPE

The TYRAH AR can be connected to any type of PPE by any other manufacturer.

The interfaces to the connecting links (karabiners, rings, etc.) must be in such a way as to exclude any risk of damage to the TYRAH AR, other PPE or their functional efficiency.

Possible inappropriate uses

(Ways of using the rescue triangle that are inappropriate and for which it is not designed)

Any use that is not in conformity with the regulations (inappropriate use) of the product or its individual components can lead to evident or hidden damage to the same and, therefore, compromise its safety characteristics. In the event of inappropriate use, the producer disclaims all responsibility.

Several examples of inappropriate uses:

- Hooking up at any point that is not the authorised slinging point
- The so-called "tying" slinging technique (knots)
- Connecting SP1 to SP3 or SP2 to SP3 around the shoulder; twisting the rescue triangle by 90°
- Replacing accessories with products that are not certified
- Lengthening the sling ropes with unauthorised or inappropriate components, e.g. lashing straps
- Using the following parts as slinging points: shoulder straps, grips, hip belts, bottom belts. (By using these parts the straps might be ripped out of their seams).



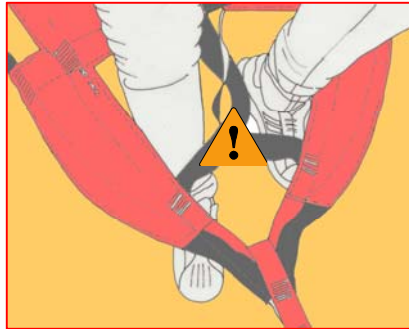
WARNING

This list is incomplete. Therefore, avoid similar situations that deviate from the appropriate use.

Be careful to avoid other possible risks

The following factors could lead to dangerous situations and, therefore, must absolutely be avoided:

- Knots in the ropes
- Tying an object to a rope
- The sling getting caught in rocks, walls, trees, etc.
- Wrong positioning of the accessories during the working phase
- Pressing and rubbing against cutting edges, sharp corners or other materials
- Contact with power lines
- Sparks caused by induction or electrostatic discharges
- When lacking adequate instruction or in the case of self-rescue there is the risk that the person will try to get into the device by placing their feet into the seat between the bottom belts.



WARNINGS

Lengthening of 20 cm with a quickdraw = Caution: sitting position too upright, constriction in the leg and armpit area!

The yellow straps on the shoulders of heavy persons up to 150 kg must be sufficiently tied in order to support the back.

Wrong use can lead to injuries in the crotch area. Risk of tilting backwards.

This list is incomplete. Therefore, avoid similar situations that deviate from the appropriate use.

In the above-mentioned cases, the carrying capacity of the working tools can be annulled and, therefore, prevent the component/components in question from functioning.

Maintenance and repair

Basic principles

Based on EC directive 2009/104/EEC (CH: VUV/OPA/OPI art. 32.b, EKAS/CFST/CFSL 6512, art. 6.1; DE: BetrSichV art. 10) concerning the minimum safety and health requirements for the use of work equipment by workers at work, the working tools must be inspected at least once a year by a qualified person who is an expert in the field (DE: BetrSichV § 2 para. 7, TRBS 1203). Also see Suva check list n. 67017.

see also ED Decision 2014/018/R, Annex VIII Part-SPO, AMC1 SPO.SPEC.HEC.100

The necessary inspection

Before and after every assignment, the structural components must be checked visually to make sure they are working perfectly and that there is no damage.

Especially the hooks' locking mechanism and its securing device must be checked. Also check ropes for external damage.



WARNING

In principle, even if there is the slightest doubt regarding safety, product components must be immediately removed from service and checked.

The producer disclaims all responsibility for damages caused by inappropriate maintenance.

Situations in which the product has to be removed from service

If not worn out or damaged in other ways, this product can be used according to the indications shown on the producer's label. However, wear or other damage could nullify the product's functionality even at its first use. Life = storage time + operating time.

Stress on structural components by overloading cannot be seen visually and cannot be repaired.

Steel components must be replaced even before their expiry date when wear due to contact reaches 10% of the minimum diameter of the component ($D_1 + D_2 : 2 = >90\% D_{1-2}$)

Textile components must be replaced even before their expiry date if the protective sheathing is destroyed due to mechanical, chemical or thermal cause.



A&H Services offers an extensive inspection and testing service for all its in-house products.

Criteria for the removal from service

Component	Rating of failure			
	K1	K2	M	N
Straps/belts (all), but only 1 damaged		X		
Shoulder straps (yellow)				X
Option: metal eyes (SP1 to SP3)	X			
Option: textile loops (SP1 to SP3)	X			
Cloth		X		
Connecting elements (karabiner, not included with rescue triangle): smallest diameter –10 %, or visible taper	X			

Rating

- K1 damage to structure causing total rope/accessory failure
- K2 damage to structure not causing total failure, but operation must be suspended
- M possible suspension of operation, safety is not immediately compromised
- N no risk, safety is not compromised

Measures to be taken

- K1 Removal of rope, cannot be repaired
- K2 Repair possible, but only by A&H Services
- M Repair possible, by A&H or client (A&H consultation required)
- N Repair possible, by A&H or client (A&H consultation required)

Priority

- immediate
- immediate
- daily
- daily

Aging times of textile materials (normal weathering)

- Polypropylene PP/PPM on average ages approximately 30% per year
- Polyamide PA ages approximately 8 - 10% per year
- Polyester PES and high module polyethylene HMPE ages approximately 3% per year

WARNING



- a) In the event of interventions in contaminated areas, e.g. rescue operations dealing with machine accidents (e.g. battery acid), or on surfaces treated with nitrates, the textile or synthetic components may become polluted with corrosive substances and therefore become damaged.
- b) Any modification to the structure, e.g. provisional seams, will cause the producer to immediately disclaim all responsibility.
- c) Avoid contact with any abrasive, cutting or pointed object.
- d) Avoid contact with power lines or power stations.

Major overhaul

Ropes and belts cannot be overhauled. The product may have to be replaced.

Spare parts

No spare parts.



WARNING

The use of self-made parts or wrong assembly leads to immediate warranty exclusion and the disclaim of any responsibility.

Correct cleaning and storage

If the structural components become dirty, wash them with water at a max. temperature of 30°C and then let them dry in a well-ventilated room. All types of cordage can be cleaned with water and a soft brush. In the event of heavy pollution, cleaning with a light alkaline solution is possible where necessary. Store far away from sources of light and heat.

When soiled with body fluids, TYRAH AR can be machine washed at a max. temperature of 40°C with a suitable laundry detergent (test performed with ELTRA40). The rescue triangle might shrink a little in the wash (approximately 1 cm).

Slight contaminations can be hand washed at 30°C. Lay the TYRAH AR triangle in a lightly alkaline solution and let it soak for approximately 15 minutes. Remove the dirt by shaking the triangle in the water or slightly rubbing it with your hands, then rinse thoroughly with lukewarm water.

Light dirt (caused by a bit of soil or dust) can be dried and removed by means of a vacuum cleaner.



DANGER

DO NOT CLEAN PPE WITH HIGH PRESSURE OR COMPRESSED AIR!

Resistance to chemical substances

In the event of contact with acids, alkaline solutions, nitrates, fuels etc., components made of PPM, PES, PA or PP must be removed from service.

Expiry date (EXP.)

If not worn out or damaged in other ways, this product can be used according to the indications shown on the producer's label. On the other hand, wear or other damage could nullify the product's functionality even at its first use. Life = storage time + operating time

- The production date is shown at "PROD:" on the producer's label.
- The expiry date is shown at "Exp." on the producer's label.

Authorisation to prolong the expiry date, because the product has only been stored and never used, can only be obtained from the producer.



Also check and read AWA 3 (maintenance: textiles)

Guarantee

If used for the purposes for which it was designed and if both use and storage are carried out according to the regulations (see instructions for use and for storage), the producer guarantees the product against material and production defects for a period of 2 years.

The guarantee is null and void: after two years of normal use; immediately in the event of inappropriate use, modifications to the structure or other parts, inappropriate use etc.

The producer disclaims all responsibility for any direct or indirect consequences, accidents or any other type of damage caused by the use of its products.

Recall

The producer reserves the right to recall the product at any time. The producer will take care of the product's disposal directly or supervise its disposal in accordance with the regulations in force for the protection of the environment.

Regulations

Legal assumptions

This product is in conformity with the minimum requirements of the law regarding:

- European Council directive n° 89/686/EEC on PPE, personal protective equipment, class III
- European Standard EN 1498 B - rescue loops
- Swiss Federal law on safety of products (PrSG, SR 930.11)
- Swiss ordinance on safety of products (PrSV, SR 930.111)
- EU Council directive n. 2009/104/EEC regarding the use of work equipment
- EASA CS-27./29.865, CM-CS-005 simple PCDS
- ED Decision 2014/018/R, Annex VIII Part-SPO, AMC1 SPO:SPEC.HEC.100

A state-of-the-art product at the moment of the publication of this documentation.

Technical documentation

The present instructions for use and maintenance are an integral part of the technical documentation compiled by the producer in conformity with European Council directive n° 89/686/EEC regarding PPE, annex II and annex III. The EC declaration of conformity issued by the producer in accordance with annex VI is an integral part of the technical documentation and an original copy of it will be given to the customer.

The producer depends on your detailed feedback in the case of unexpected events or dysfunctions. Technical documentations are "Living Documents" which have to be updated by the producer when necessary.

Labelling

The designation (P/N) TYRAH AR refers to the product (rescue triangle). Sizes: unisize

The order number ("AD-Nr.") is a reference code which allows the order, the manufacturing and the production date to be retraced.

Quality assurance

Each individual component of the structure is certified and undergoes regular checks by an external body (art. 11, para. B) in conformity with European Council directive 89/686/EEC during acquisition and manufacturing.


Design and distribution (manufacturer)

AirWork & Heliseilerei GmbH (A&H) A&H Engineering and A&H Equipment

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Conditions for product use

This product has been manufactured in compliance with EC-PPE directive 89/686/EEC. These instructions (AWA) as well as the EC declaration of are an integral part of this product. In absence of valid instructions for use and maintenance (AWA) or without adequate training prior to use of the product, the latter cannot be considered safe. Gaining a good knowledge of the present instructions for use and maintenance (AWA) must be part of user training carried out by the producer or its authorised representative (see "User training").

Inspection authority

Type examination by the following notified body:
Sicherheitstechnische Prüfstelle (STP) der Allgemeinen Unfallversicherungsanstalt
(Safety Testing Centre of the Austrian Workers' Compensation Board), NB 0511
AT-1201 Wien, Adalbert-Stifter-Straße 65
PHONE: ++43 +1 33 111-534 / 516, FAX: ++43 +1 33 111-901
Email: STP@auva.at, internet: www.auva/pruefstelle.at
Test report n° "IB 2012-3530", Type certificate n° "BMB 2012-3530"

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