

WHAT IT MEANS TO USE ROPES IN AERIAL WORK

MANUFACTURERS' RESPONSIBILITY

Aerial work is among the most important rotorcraft operations, especially in mountainous countries like Austria or Switzerland. While the helicopter itself is mainly focused on the asset, the transport rope below also needs to be paid close attention to. Today the manufacturing of a rope for external cargo purposes comes close to what's encountered when building an aircraft – with lots of rules and directives that need to be followed. Companies that try to work around that can get into deep trouble.

In accordance with the Federal law on safety of products (ProdSG, art. 1), the 9th Ordinance on the latter (9. ProdSV) and EU machinery directive 2006/42/EC, art. 1(1)d) and art. 2, lifting accessories and slinging devices, as well as their components, fall under the category of machinery. This means that every rope, round sling and slinging chain, every FIBC, cargo net and chalk dispersing bucket used during helicopter assignments is regulated by ordinance formulated within the ProdSG, specifically by Machinery Directive 2006/42/EG (hereinafter MD).

The applicability of the MD includes design, manufacturing, distribution and putting into operation. As can often be seen and is a permanent issue at BG-Verkehr's helicopter seminar in Sellinghausen in the Hochsauerland region, many lifting accessories are not in conformity with the MD requirements, some of these are constructed within the companies themselves and subsequently used during flight operations.

Let's first state some facts:

- Helicopter companies fall under the category of users, not manufacturers.
- Sometimes, helicopter companies act as producers without knowing it.

- Manufacturers are not helicopter companies, but then deliver their products to the latter.

THE SIDE OF THE USERS

That helicopter operators are also users is in the nature of things. Whenever performing external cargo transport, they employ lifting accessories to attach loads to a helicopter. This is a classic method during lifting operations; the helicopter acts as a crane. On the legal side, this also implies that helicopter companies are subject to the laws on safety at work and are insured with the Professional Association for Transport BG-Verkehr as one of the institutions for statutory accident insurance against occupational injuries and diseases. Users can find the regulations on the employment of lifting accessories in combination with a helicopter in the following legislative texts:

- ED Decision 2014/018/R, Annex VIII Part-SPO, AMC1 SPO.SPEC.HES-LO.100(c)(3), Additional Equipment
- EU Directive 2009/104/EC on work equipment (2nd individual directive within the meaning of article 16, para. 1, of Directive 89/391/EEC on Occupational Safety)

EASA Part-SPO defines load lifting accessories as "additional equipment" which must be manufactured in conformity with an acknowledged rule of technology, while the operators are responsible for maintaining its serviceability.

The Directive on Work Equipment and/or the Ordinance on Industrial Safety and Health regulate the appropriate preparation, the correct use and the regular inspection of machinery which, in this context, is now called work equipment (see employers' and workers' obligations).

In Germany, the Occupational Health and Safety Act and/or the regulations issued by the professional associations and specifically BGR 162 "Hubschraubereinsatzregeln" (Rules for helicopter assignments) are authoritative. The latter is currently being revised and will soon be republished by BG Verkehr and DGUV.

The legislative character of the MD applies to all of Europe (EU) and to Switzerland (included by name in the national law). In Switzerland, the acknowledged rule of technology is the "Marshaller Syllabus" (FOCA, 1996) which, however, urgently needs to be updated as six years have passed since its last revision.

In the end, it always boils down to the same conclusion: users are responsible for both the correct employment of products and their appropriate maintenance.

WHEN USERS BECOME PRODUCERS

Sometimes helicopter companies end up as producers because they manufacture homemade load lifting accessories or modify purchased equipment and then put it to use. As mentioned before, the producers' domain is the EU Machinery Directive 2006/42/EC. Consequently, this directive also defines the use of equipment in combination with helicopters:

- Art. 1(1)d) and art. 2: lifting accessories (as well as slinging equipment and their components) are considered machinery.
- Art. 1(2)e) (exceptions): "means of transport by air, on water and on rail networks with the exclusion of machinery mounted on these means of transport;"

The common excuse "we just employ these products for our personal use" doesn't help since the Machinery Directive leaves no room for doubt. In fact, article (2) e) of the section regarding definitions unmistakably states: "Manufacturer' means any natural or legal person who designs and/ or manufactures machinery or

partly completed machinery covered by this Directive and is responsible for the conformity of the machinery or the partly completed machinery with this Directive with a view to its being placed on the market, under his own name or trademark or for his own use."

But there is more to it: even those who merely employ accessories without a label or of uncertain origin automatically fall under the category of producer. "[...] In the absence of a manufacturer as defined above, any natural or legal person who places on the market or puts into service machinery or partly completed machinery covered by this Directive shall be considered a manufacturer;"

HISTORICAL BACKGROUND

The fact that users from time to time act as manufacturers stems from history but it also has regulatory motivations. External load transport plays an almost non-ex-

istent role in Europe-wide or worldwide aviation and thus represents a niche par excellence.

20 or 30 years ago, things were different, maybe not better but certainly simpler.

THE USE OF A ROPE MAKES SAFETY AN IMPORTANT ISSUE

Whenever a rope enters the game, the question of safety always arises. In the past, lost cargo didn't matter so much as long as no one was injured. But today, ropes also underlie regulations and they focus both on safety and liability.



If a cargo was lost, it aroused public excitement: "Finally something is actually happening in this godforsaken place!" A rope failure or the unintentional opening of a cargo hook was sort of "God-given". The heads of investigation were the pilots themselves, each and every marshaller or pilot had at least one cargo loss per year under their belt. As long as no one was harmed, the overall motto was "who cares". After the occurrence of incidents, the flight companies carried out the investigations themselves to find the causes and then drew their own conclusions with a view to the choice of their lifting accessories. The investigation results were almost considered a company secret in order to stay ahead of competitors.

Although today there are manufacturers who are specialised almost exclusively in the production of load lifting accessories for helicopter external cargo transport, a certain "Do it yourself" mentality still exists in the branch. This is also due to the fact that load lifting accessories are not subject to certification and the national authorities simply had no interest in the matter (and partly still don't). For the flight companies, it is one of the last areas in which a license is still not required.

THE PRODUCERS

Users and producers have a mutual relationship: users buy products in good faith, tacitly trusting the manufacturer "to know his stuff". In fact, it lies within the producers' responsibility to provide users with a safe product, which means a state-of-the-art object fulfilling the basic requirements stipulated by the regulations on safety and health protection. From this it follows that producers are responsible for the manufacturing and placing on the market of safe products. Producers' responsibilities are far-reaching. The common phrase "I just sell breaking load and what others will do with it is not my business" is not in conformity with the regulations. The fact that, at the end of the manufacturing process, instructions for use and maintenance must be compiled and delivered together with the EC declaration of conformity – in the users' own language – already proves that producers must acquaint themselves

with expert knowledge. One simple solution producers could adopt would be, for example, to ask the purchasers "What are you going to do with my rope?" But this is just one of many more questions! For instance, relying on standards or design specifications alone, such as FAR 27.865 or FAR 29.865 (now EASA CS-27.865 or CS-29.865), may be misleading. For the aviation branch, generally prone to excessively believe in standards, this is fatal.

After the series of measurement flights, carried out from 2011 to 2014 and organised by BG Verkehr in collaboration with the aviation department of the German Federal Police, AirWork & Heliseilerei GmbH and other Swiss civil aviation companies, one fact became crystal clear: the Static Limit Load Factor 2.5 stipulated in CS-27./29.865, which equals the proof load of 2.5 stated in EN 1677-A1 (components for slings), does not suffice to safely cover all of the load increasing factors appearing during external load operations with helicopters; due to flight manoeuvres, even in ordinary external load transports the load peaks regularly exceed that value. Therefore, in the revised version of BGR 162 "Hubschraubereinsatzregeln" (Rules for helicopter assignments) the professional association BG Verkehr will increase the factor to 3 for external loads, logging excluded, and even to 3.5 for logging operations and thus impose these values as an acknowledged rule of technology. This means that, in the future, every manufacturer (for the definition of "manufacturer" see above) will be obliged to include these new values in their calculations.

THE CONSEQUENCES FOR THE USERS

The complexity of the topic "Machinery Directive", ranging from the laws of product safety and product liability to dozens of directives, standards and other technical specifications to the necessity of appropriate technical documentation and material science, means that users cannot be blamed for their potential lack of expertise in the matter. Nonetheless, if users employ qualified equipment incorrectly (misuse) or, as described above, act as manufacturers without taking upon themselves the obligations involved, this may lead to serious civil or criminal proceedings.

Even the mere employment of load lifting accessories delivered without a label by their producer can entail significant consequences for the users since, according to the definition of "manufacturer" in the Machinery Directive, by doing so they can become producers – a doomed loop. ■

