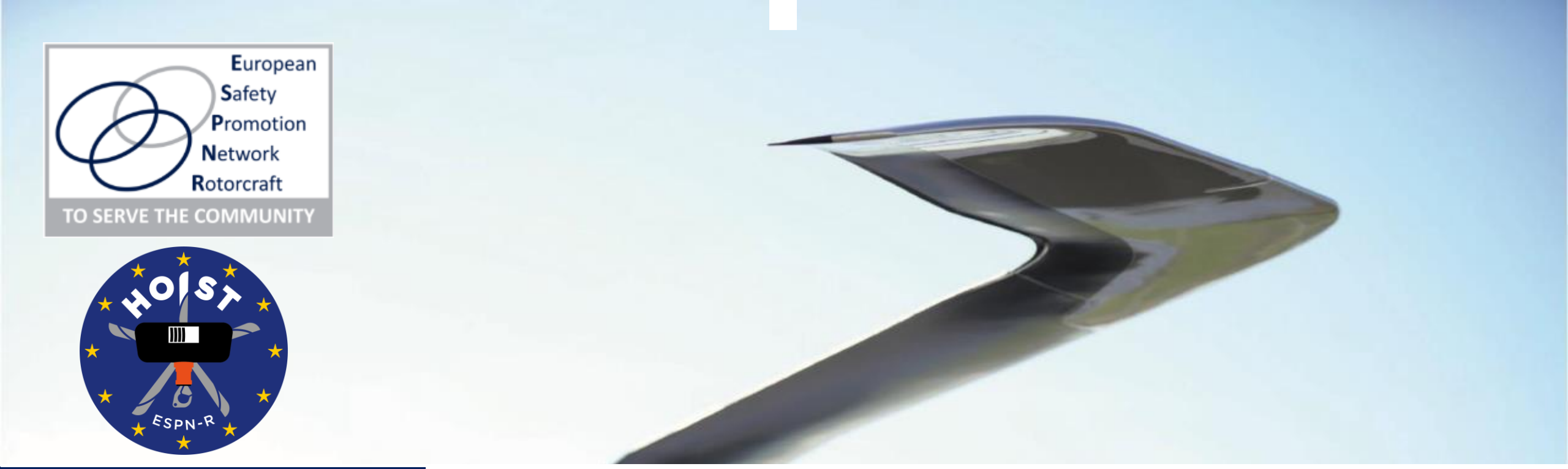

HELICOPTERS

European Safety Promotion Network – Rotorcraft (ESPN-R) Hoist Operation

Alexander Weissenboeck, Airbus Helicopters

ESPNR Hoist Presentation DRF HHO Symposium 2024

AIRBUS

JULIEN EYMARD

A QUICK INTRODUCTION...

SENIOR REAR CREW INSTRUCTOR

LEONARDO HELICOPTERS

- *21 years as Helicopter SAR/HEMS/VVIP Flight Engineer in the French Air Forces;*
- *Leonardo Helicopters Rear Crew Flight Instructor since 8 years;*
- *Lead Rear Crew Instructor and parte of Flight Training and Services Design Team;*
- *In charge of the Operational Training including HEMS activities;*
- *SAR, CSAR & HEMS Specialist;*
- *Personal Protective Equipment Instructor & Inspector;*
- *Member of ESPN-R Hoist Safety Promotion Task Forces.*

European Safety Promotion Network Rotorcraft

TO SERVE THE COMMUNITY

LEONARDO HELICOPTERS

ALEXANDER WEISSENBOECK

Sales Promotion Manger

Airbus eXpert for Hoist Operations &

AIRBUS HELICOPERS

- +30 years of Aviation (Rotor & Fixed Wing) experience
- EASA Part 66 B1.1, 1.3 / C Licensed Engineer & Qualified Hoist Operator
- *…various functions within Airbus Helicopters since 2007:*
  - Customer Support Manager for HEMS & Hoist operators / Europe
  - System Design Responsible for Goodrich Hoist System
  - Head of Field Technical Assistance for France & Germany (OEM TechReps)
  - Technical Expert for Engines and Optional Equipment
  - Team Leader Quality Management Prototype Flight Test, Certifying Staff
- *…and a previous life as Technical Director at BOSCH Corporate Aviation Stuttgart and Certifying Staff at ALT / Air Lloyd, St.Augustin Hangelar.*

European Safety Promotion Network Rotorcraft

TO SERVE THE COMMUNITY

AIRBUS

European Safety Promotion Network Rotorcraft

TO SERVE THE COMMUNITY

What / **Who is ESPN-R?**

Developing Practical Material - ESPN-R

European Safety Promotion Network Rotorcraft (ESPN-R)

→ A mixed industry-authorities partnership aiming to develop, disseminate and evaluate Safety Promotion (SP) material and contribute to SP campaigns

→ Ensuring that SP material reaches the target audience in addition to authority and industry channels

Many expert contributors are working voluntarily and partly in their leisure time!

→ OEMs, Operators, Associations, Industry and Aeronautic suppliers like Simulator Manufacturers, NAA and EASA, etc.

European Safety Promotion Network Rotorcraft

TO SERVE THE COMMUNITY

An as wide as possible outreach is key!!
As well outside of Europe!

Aviation Safety:

Worldwide SAFETY Promotion in the Rotorcraft Sector & Keyplayers

VERTICAL AVIATION SAFETY TEAM

Safety Above All

www.vast.aero

ExVertical Aviation Safety TeamRoadMaps

Helicopter Association International

European Safety Promotion Network Rotorcraft

TO SERVE THE COMMUNITY

EASA European Aviation Safety Agency

EHA European Helicopter Association

AIRBUS HELICOPTERS

LEONARDO

European Safety Promotion Network Rotorcraft (ESPN-R) | EASA (europa.eu)

Vertical Aviation Safety Team – VAST

VAST Members - VAST

5 Teams for Leverage in Focus Areas

ESPN-R Team Training
Lead: mathieu.vandenavenne@safety4flight.com
ESPN-R Team Ops & SMS
Lead: sburigana@elilombarda.com
ESPN-R Team Technology
Lead: Joost.Vreeken@nlr.nl

Training

Ops & SMS

Tech

ESPN-R Task Force Hoist Safety Promotion
Lead: alexander.weissenboeck@airbus.com
ESPN-R Task Force Sling Load Safety Promotion
Lead: N.N.

Hoist

Sling Load

ESPN-R LinkedIn main forum (> 3000 members !!)

European Safety Promotion Network Rotorcraft
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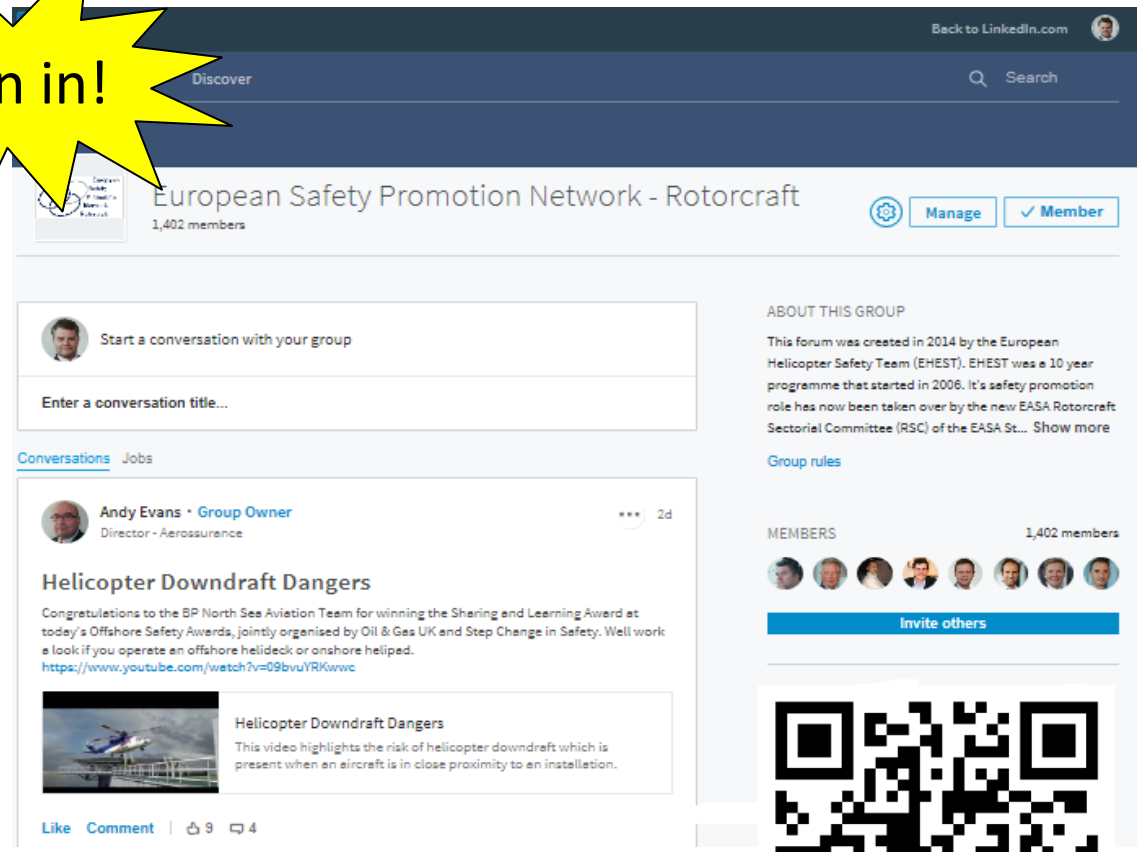
Join in!



European Safety Promotion Network Rotorcraft (ESPN-R) | EASA (europa.eu)

ESPN-R Sling Load Operations Safety Promotion | Groups | LinkedIn

EASA
European Union Aviation Safety Agency

Together4Safety

European Safety Promotion Network Rotorcraft
TO SERVE THE COMMUNITY

Thanks for you attention!

Contacts:

michel.masson@easa.europa.eu

bernd.osswald@airbus.com

joost.vreeken@nlr.nl

SafetyPromotion@easa.europa.eu

Your safety is our mission.

Core working member of the hoist operational task force:

- Karl Mueller – Swiss Air Forces
- Christoph Hess – Swiss Air Forces
- Klaus Hopf – Police Helicopter Squadron Bavaria (retired)
- Frank Weiskopf – Bavarian Helicopter Police Squadron
- Stefan Timmermans - Police Helicopter Squadron Hessen
- Fabrice Legay, Jan Loncke, Eric Bennet, Michel Masson, John Franklin – EASA
- Dario De Liguoro - Leonardo Helicopters Company
- Julien Eymard - Leonardo Helicopters Company
- Walter Traversa – Avincis Italy
- Michele Valenza - THC
- Sebastian Schneider - DRF Luftrettung
- Jörg Redetzky - DRF Luftrettung
- Roland Benning – ADAC Luftrettung
- Davide Losa – KONG
- Michael Kammerer - KronSafety

- Thomas Knudstrup – LiteFlite
- Markus Greil – Tyromont
- Stefan Blochum - Bergwacht Bayern
- Arjan Dehaan – Northern HeliCopter
- Simon Kremser - Northern HeliCopter
- Ivo Airaudi – Airgreen
- Davide Subrero - Starworksky
- Philippe Dugourd – LAR
- Renaud Guillermet – Securite Civile
- Rupert Gleissl – Airbus Helicopters & Bergwacht Bayern
- Christian Balta – Airbus Helicopters
- Bernd Osswald – Airbus Helicopters
- Alexander Weissenboeck – Airbus Helicopters

….and many more contributors from all over the world…..

…busy times 2022, 2023 & 2024…

…and more virtual meetings & workshops…

Workshop ***Leonardo Helicopters Sesto Calende/ IT*** *November 2021*

1st DRF HHO Symposium *September 2021*

Collins User Conference *March 2022 HAI Dallas/US*

EUROPEAN ROTORS

November 2021

May 2022 PCDS Workshop KONG / IT

March 2022 PCDS Workshop Bergwacht Bad Tölz

ICAR

October 2022

2nd DRF HHO Symposium *September 2022*

Collins User Conference *March 2023 HAI Atlanta/US*

EUROPEAN ROTORS

November 2022

3rd DRF HHO Symposium *September 2023*

May 2023

PCDS & Hoist Pilot Workshop

ICAR

October 2023

EUROPEAN ROTORS

November 2023

February 2024 HAI Los Angeles/US

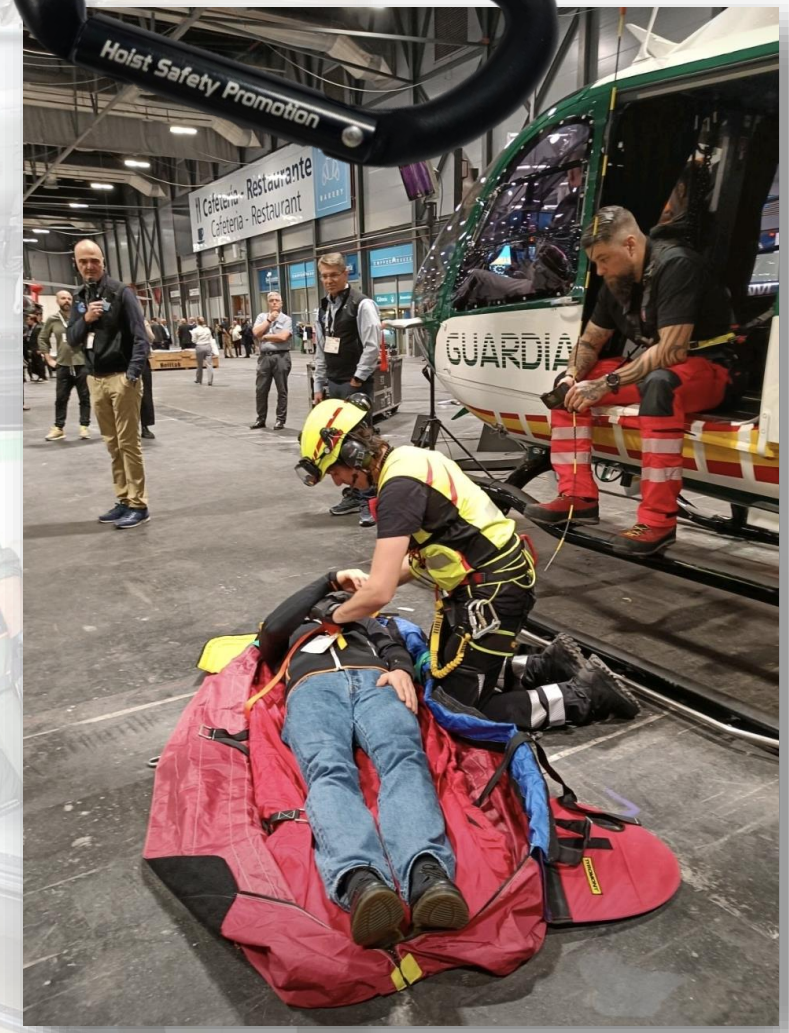
Collins Aerospace

2024 GOODRICH HOIST OPERATORS CONFERENCE AGENDA

CONFERENCES AND MEETING

EUROPEAN ROTORS | THE VTOL SHOW AND SAFETY CONFERENCE

PRACTICAL WORKSHOP



Reminder of Airbus Helicopters Safety Promotion Notice for Hoist Operations

AIRBUS HELICOPTERS

No. 3195-P-00

SAFETY PROMOTION NOTICE

SUBJECT: GENERAL

ESPN-R Hoist Task Force recommendations

For the attention of

AIRCRAFT CONCERNED	Version(s)	
	Civil	Military
EC120	B	
AS350	B, BA, BB, B1, B2, B3, D	L1
AS550		A2, C2, C3, U2
AS355	E, F, F1, F2, N, NP	
AS555		AF, AN, SN, UF, UN, AP
EC130	B4, T2	
SA365 / AS365	C1, C2, C3, N, N1, N2, N3	F, Fs, Fi, K, K2
AS565		MA, MB, SA, SB, UB, MBe
SA366		GA
EC155	B, B1	
SA330	J	Ba, L, Jm, S1, Sm
SA341	G	B, C, D, E, F, H
SA342	J	L, L1, M, M1, Mu
ALOUETTE II	313B, 3130, 318B, 318C, 3180	
ALOUETTE III	316B, 316C, 3160, 319B	
LAMA	315B	
EC225	LP	
EC725		AP
AS332	C, C1, L, L1, L2	B, B1, F1, M, M1
AS532		A2, U2, AC, AL, SC, UE, UL
EC175	B	
EC339		KUH/Surion
BO105	C (C23, CB, CB-4, CB-5), D (DB, DBS, DB-4, DBS-4, DBS-5), S (CS, CBS, CBS-4, CBS-5), LS A-3	CBS-5 KLH, E-4
MBB-BK117	A-1, A-3, A-4, B-1, B-2, C-1, C-2, C-2e, D-2, D-2m	D-2m
EC135	T1, T2, T2+, T3, P1, P2, P2+, P3, EC635 T1, EC635 T2+, EC635 T3, EC635 P2+, EC635 P3, T3H, P3H, EC635 T2H, EC635 P3H	

Revision 0 2019-09-19 Page 1/37

AIRBUS HELICOPTERS

No. 3195-P-00

2.2 OPERATIONAL RECOMMENDED PRACTICES

Depending on whether the hoisting operations are performed by night or during the day, onshore or offshore, specific recommended practices & scenarios can be identified.

2.2.1 OFFSHORE HOISTING OPERATIONS

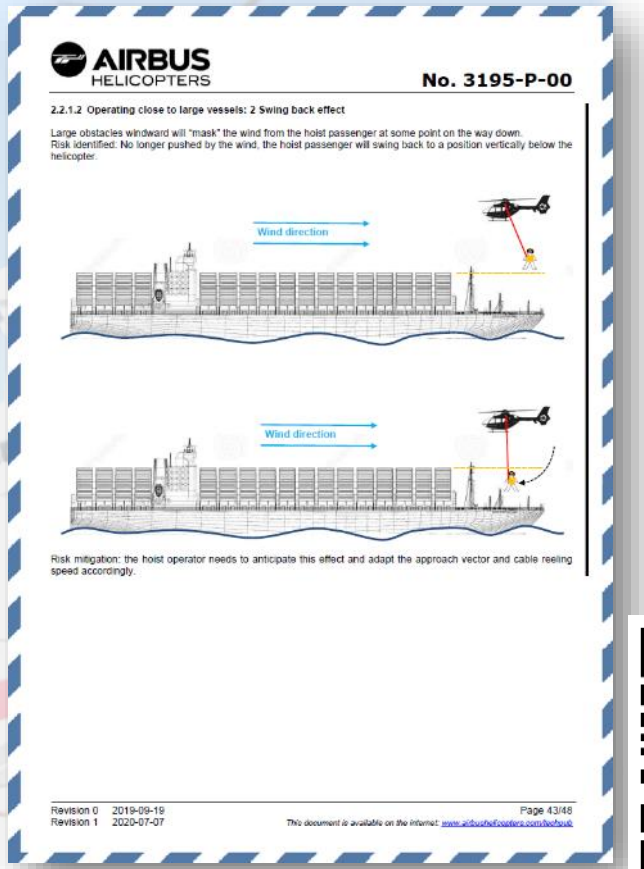
One of the specifics of offshore flight is usually laminar wind conditions. However, with the increasing use of large tankers or cruisers, specific risks need to be tackled.

2.2.1.1 Operating close to large vessels: 1 Cliff effect

Large vessels are an obstacle to laminar winds at sea and can generate dynamic updrafts and vortices, much like what can be encountered in mountain flying.
Risk identified: quick variations of dynamic updraft due to ship heading change or squalls from a different direction can induce significant height gain or loss.

Mitigation: strong awareness to this effect must be maintained
- by the pilot for choosing the hovering area, approach vector and the risk caused by obstacles in case of downdraft,
- by the hoist operator, to make sure that height variations do not occur with a hoist passenger close to the ship.

Revision 0 2019-09-19
Revision 1 2020-07-07
Page 42/48



AIRBUS HELICOPTERS

No. 3195-P-00

2.2.1.2 Operating close to large vessels: 2 Swing back effect

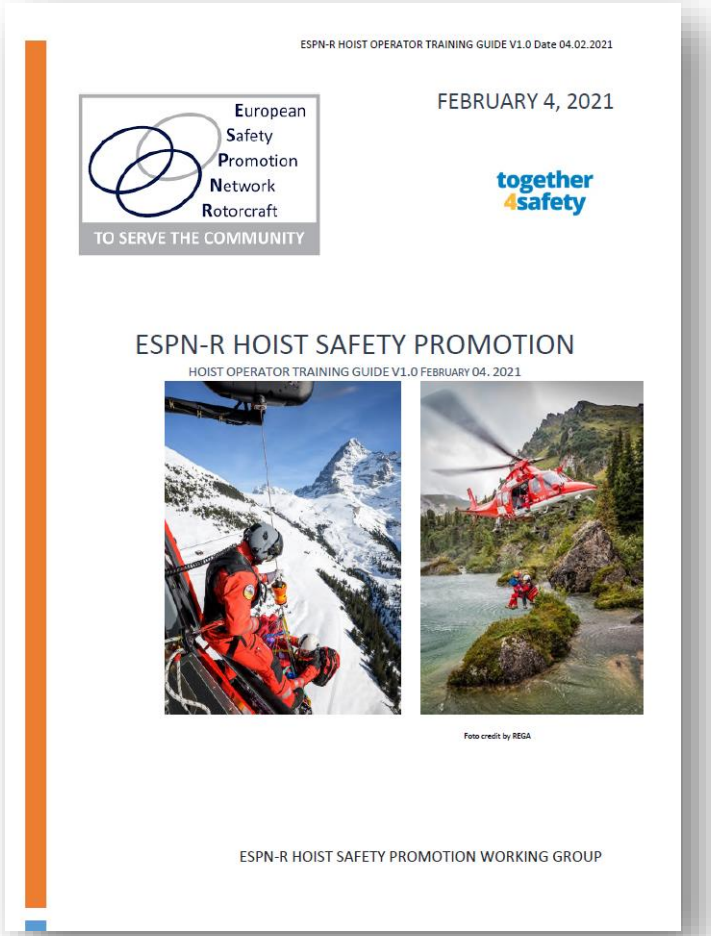
Large obstacles windward will "mask" the wind from the hoist passenger at some point on the way down.
Risk identified: No longer pushed by the wind, the hoist passenger will swing back to a position vertically below the helicopter.

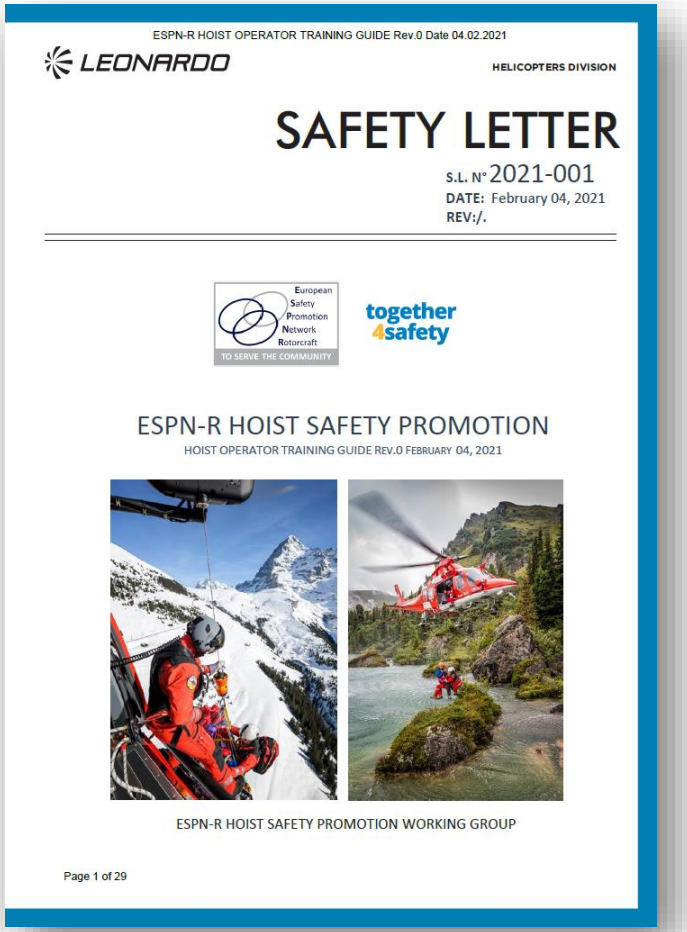
Risk mitigation: the hoist operator needs to anticipate this effect and adapt the approach vector and cable reeling speed accordingly.

Revision 0 2019-09-19
Revision 1 2020-07-07
Page 43/48

Notice (SPN) 3195-P-00-Rev-0-EN in September 2019 and revision in 2020 to also include e.g. off-shore hoisting operation information

HOIST OPERATOR TRAINING GUIDE



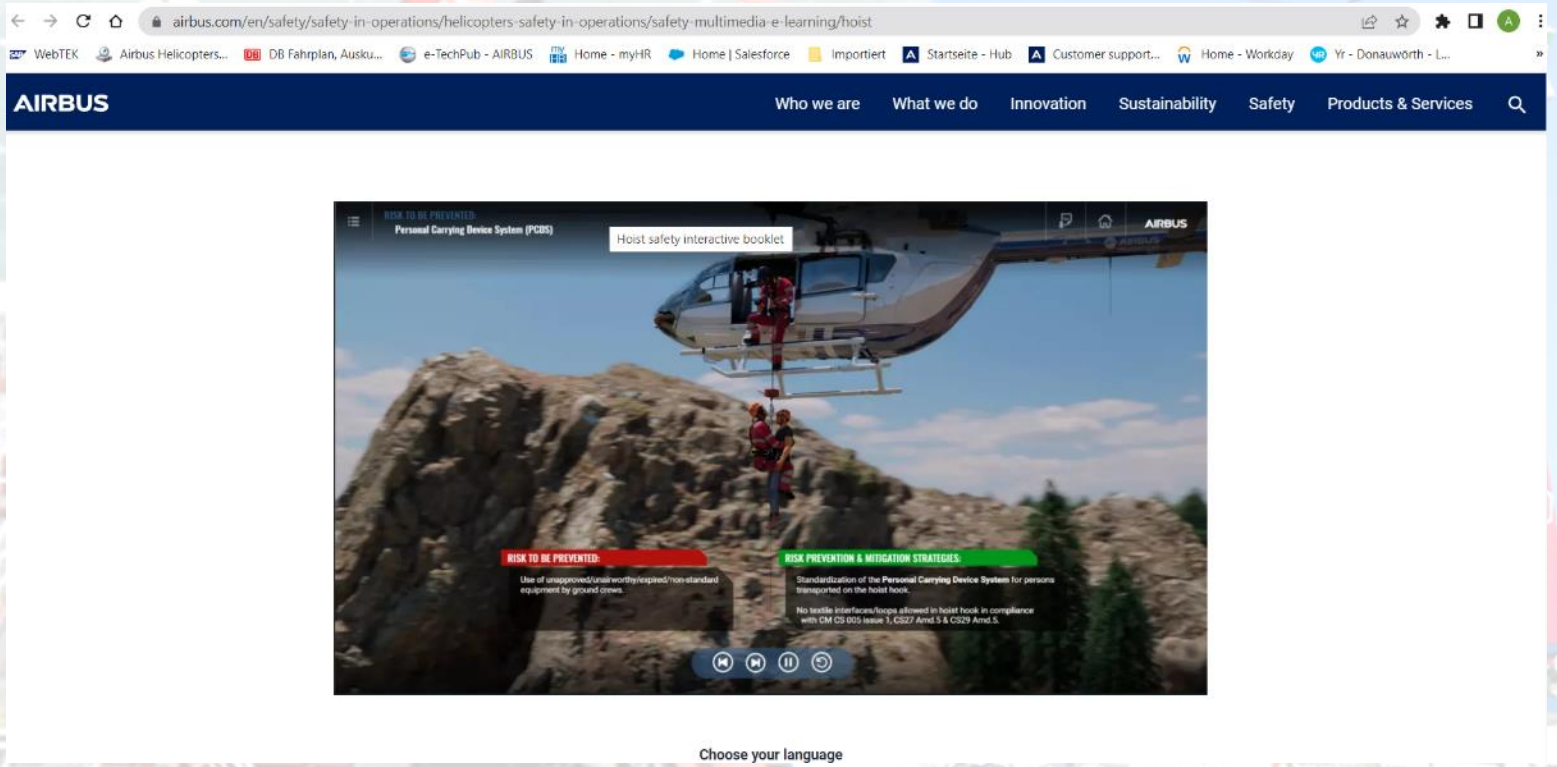


AIRCRAFT CONCERNED	Version(s)	
	Civil	Military
EC120	B	
AS350	B, BA, BB, B1, B2, B3, D	L1
AS550		A2, C2, C3, U2
AS355	E, F, F1, F2, N, NP	
AS555		AF, AN, SN, UF, UN, AP
EC130	B4, T2	
SA365 / AS365	C1, C2, C3, N, N1, N2, N3	F, Fs, Fi, K, K2
AS565		MA, MB, SA, SB, UB, MBe
SA366		GA
EC155	B, B1	
SA330	J	Ba, L, Jm, S1, Sm
SA341	G	B, C, D, E, F, H
SA342	J	L, L1, M, M1, Ma
ALOUETTE II	313B, 3130, 318B, 318C, 3180	
ALOUETTE III	316B, 316C, 3160, 319B	
LAMA	315B	
EC225	LP	
EC725		AP
AS332	C, C1, L, L1, L2	B, B1, F1, M, M1
AS532		A2, U2, AC, AL, SC, UE, UL
EC175	B	
BO105	C (C23, CB, CB-4, CB-5), D (DB, DBS, DB-4, DBS-4, DBS-5), S (CS, CBS, CBS-4, CBS-5), LS A-3	CBS-5 KLH, E-4
MBB-BK117	A-1, A-3, A-4, B-1, B-2, C-1, C-2, C-2e, D-2, D-2m, D-3, D-3m	D-2m, D-3m
EC135	T1, T2, T2+, T3, P1, P2, P2+, P3, EC635 T1, EC635 T2+, EC635 T3, EC635 P2+, EC635 P3, T3H, P3H, EC635 T3H, EC635 P3H	

Link together4safety→ here

On February 24th, 2021 the ESPN-R Hoist Operator Training Guide was released by together4safety, Leonardo Helicopers and Airbus Helicopters.

Free Airbus hoist operations e-learning in multiple languages available



Based on Notice (SPN) 3195-P-00-Rev-1-EN, Airbus Helicopters developed an interactive FOC e-learning booklet to safely carry out your hoist operations while preventing and mitigating associated risks.

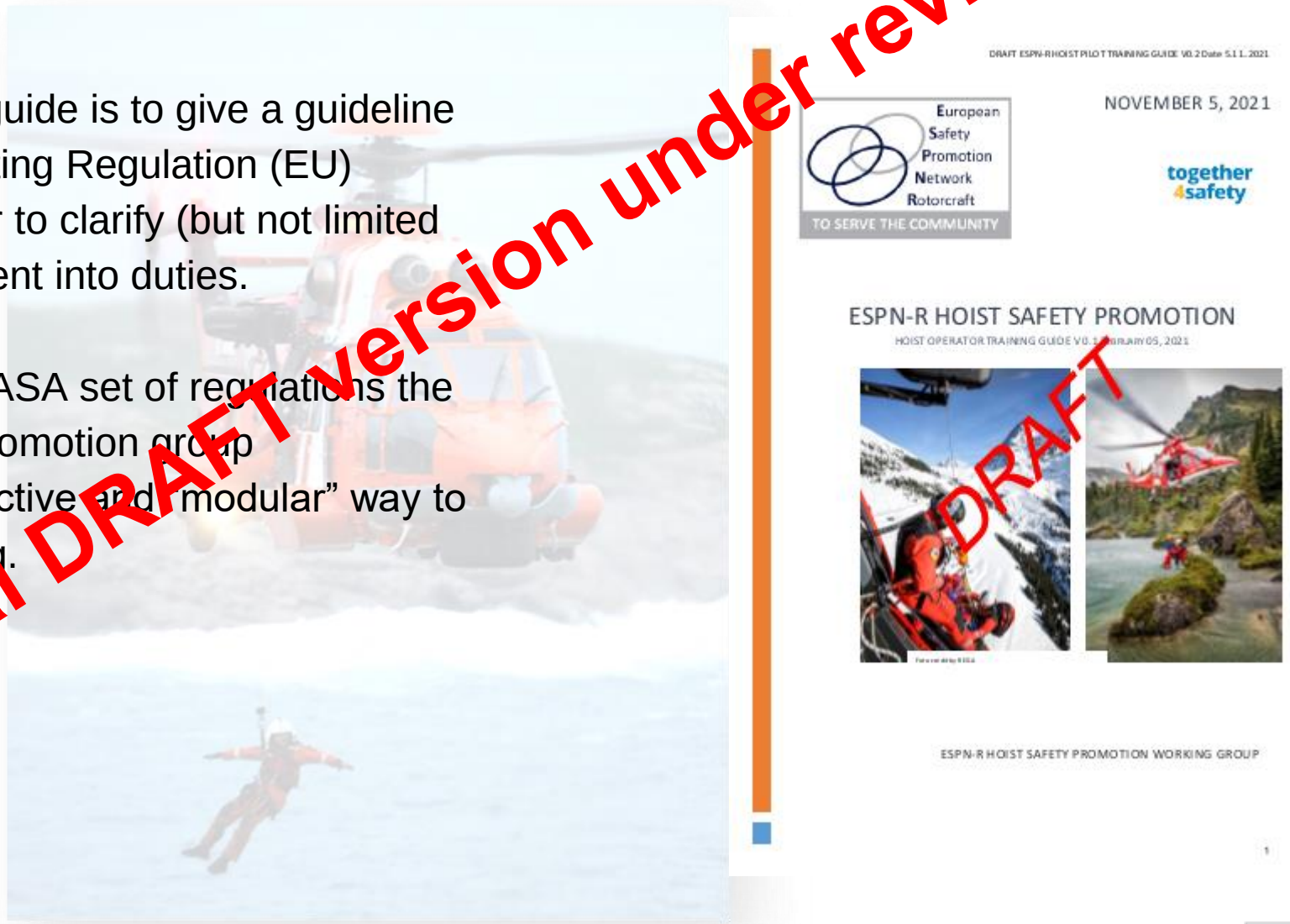
…. on August 29th, 2023 HeliOffshore referenced the ESPN-R Hoist Operator Training Guide in their **Wind Farm Recommended Practice (WinReP) V2**

Link to HeliOffshore → here

Hoist Pilot Training Guide

The aim of this upcoming training guide is to give a guideline for pilot training, based on the existing Regulation (EU) 965/2012 on air operations in order to clarify (but not limited to) training, checking and assignment into duties.

Considering the already existing EASA set of regulations the ESPN-R Hoist Operation Safety Promotion group suggests and recommends an effective and "modular" way to perform pilot education and training.

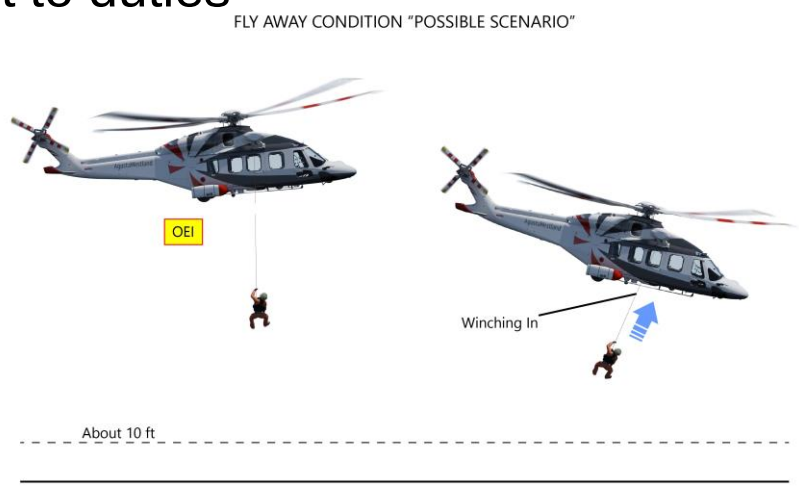


Final DRAFT version under review

PILOT HOIST OPERATIONS TRAINING

BASED ON THE HO TRAINING GUIDE FOR A BETTER HHO HARMONIZATION

- ✓ Prerequisitites for HHO Pilot
- ✓ Basic pilot HHO training – Theoretical fundamental
- ✓ Basic pilot HHO training – Practical fundamental
- ✓ Operator On Type training for HHO Pilot
- ✓ Conditions for assignment to duties
- ✓ HHO pilot
- ✓ Recency
- ✓ Reccurent training



	MANOUVERS/TASKS/PROCEDURES	1	2	3	4
AB-INITIO HOIST OPERATOR TRAINING SYLLABUS	Pre-flight briefing				
	Risk assessment for HHO				
	Mass and balance management				
	[anything missing here ?]				
	Communication				
	Performed hoist checks and pre-hoisting checks				
	Guidance over HHO sites				
	Standard hoisting circuit				
Module 2 - HOIST PILOT TRAINING SYLLABUS	Aircraft positioning using standard phraseology between Hoist Operator and Pilot;				
	Horizontal and vertical rotor and tail clearance;				
	Operation of hoist equipment;				
	Non HEC single lift (use of load) on clear area;				
	Hoist malfunctions and emergency procedures;				
	Aircraft malfunctions and emergency procedures, including simulation of an engine failure (fly away);				
	HEC Single and double lifts;				
	[anything missing here ?]				
	Standard hand signals;				
	Control of the swing and spinning avoidance;				
	Area reconnaissance, detection of specific dangers relating to the operating environments;				
	Elements of CRM like decision making, situation awareness (but not limited to);				
	De-briefing;				

DRAFT Guideline on PCDS for Helicopter Hoist Operations

- The intention of this document is to provide an overview regarding PCDS equipment set up and use to ensure proper and safe operations in H/C hoisting environments. This document provides guidelines for operators to define the configuration and use of PCDS.

- All PCDS in H/C hoist operations has to be in line with regulatory requirements covered with EASA CM no: CM-CS-005 Issue 01 / CS27 Amd.5 &CS29 Amd.5 Certification Memorandum Helicopter External Loads Personnel Carrying Device System and its internal referenced reference documentation. New issue to be respected

ESPN-R “Hoist Safety Promotion” does not aim to establish a new standard concerning PCDS for Hoist Operation but has the scope to recommend a non exhaustive list of examples in order to provide guidance in the “equipment jungle”.

GUIDELINE ON PCDS FOR HELICOPTER HOIST OPERATIONS

MAIN TOPICS COVERED IN THE GUIDANCE:

- Involved PCDS components in Hoist operations
- PCDS /Helicopter compatibility
- Required functions for PCDS equipment and PCDS System
- H/C fixed equipment
- Hoist operator
- Rescuer/ TCM/ Task Specialist
- Hoist Passenger / HHOP, Commercial Air Transport (CAT)
- Rescue Equipment, Cargo Equipment
- Training
- Maintaining and management of the PCDS for continued usage

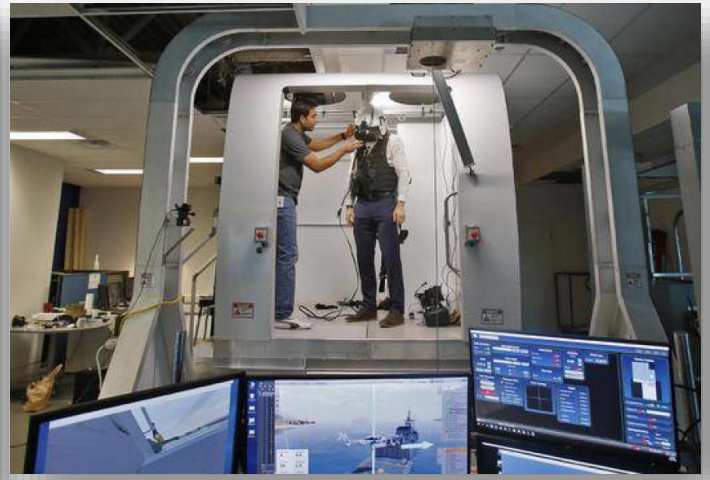
DRAFT Whitepaper on Simulated Helicopter Hoist Operations

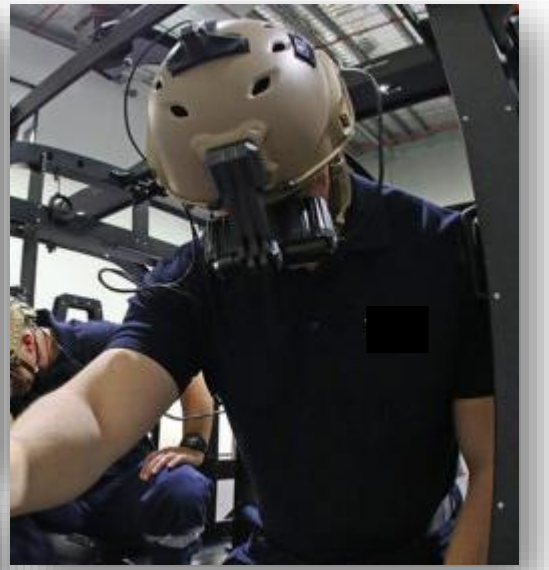
- Nowadays the **environmental and financial impacts of flight training** need to be contained more than ever **maintaining the highest standards** in order to always **improve safety and efficiency of operations.**
- Helicopter Cabin Crew and especially Hoist Operator still have to perform almost all their flight training on helicopter while **Pilots and Technicians are largely using simulated training solutions.**
- However, with the constant evolution of technology and also with Operators new mindset orientation **a new era is coming for Helicopter Hoist Operation.**

ESPN-R “Hoist Safety Promotion” does not aim to establish a standard concerning Hoist Operation simulated training but has the scope to recommend a structured approach in order to give credits to such activity.

Simulated Helicopter Hoist Operations for ab-initio, advanced, recurrent, etc…






Crew to receive training in simulator or similar device can reproduce various kind of normal & emergency procedures

European Safety Promotion Network Rotorcraft

TO SERVE THE COMMUNITY

Disruptive Hoist-Pendant Concept

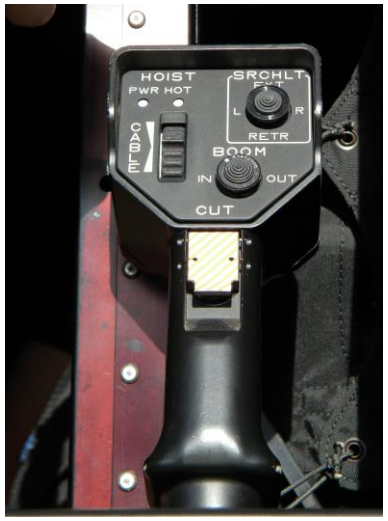
European Safety Promotion Network – Rotorcraft (ESPN-R) Hoist Operation

Stefan Timmermanns Police Helicopter Squadron Hessen
Sebastian Schneider DRF Stiftung Luftrettung gAG

Hoist-Pendant

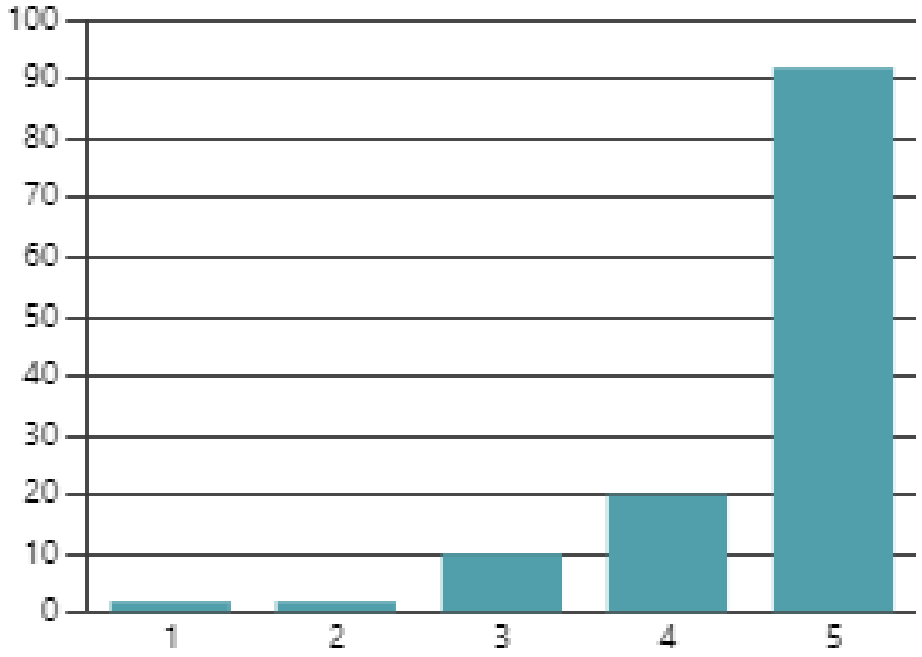
- **simple**
- **few properties**
- **few operating functions**

Example of incorrect handling of the Hoist-Pendant:



Hoist pendants from the past and present

HOIST PENDANTS MAYBE IN THE FUTURE

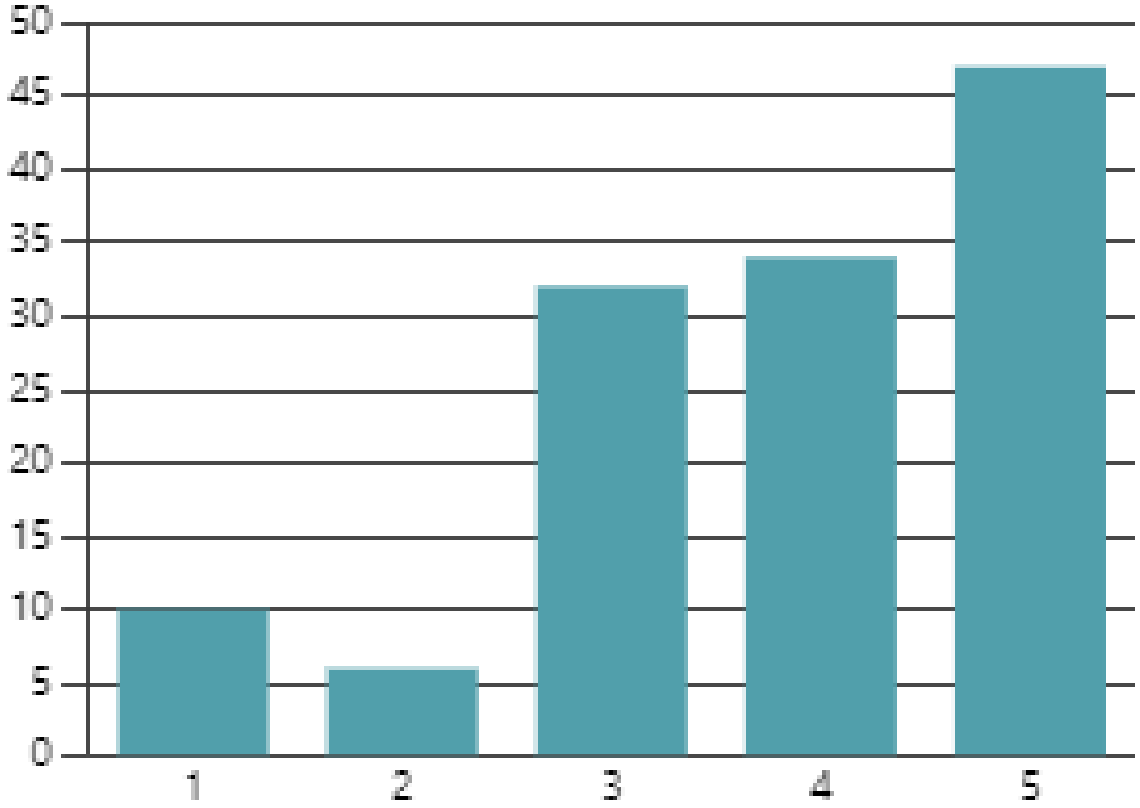


IT IS IMPORTANT TO ME THAT THE HOIST PENDANT (**CURRENT & FUTURE EQUIPMENT**) IS LIGHTWEIGHT AND THAT I CAN OPERATE IT WITH ONE HAND?

Question 6

Grade 1 = insufficient

Grade 5 = fully satisfactory

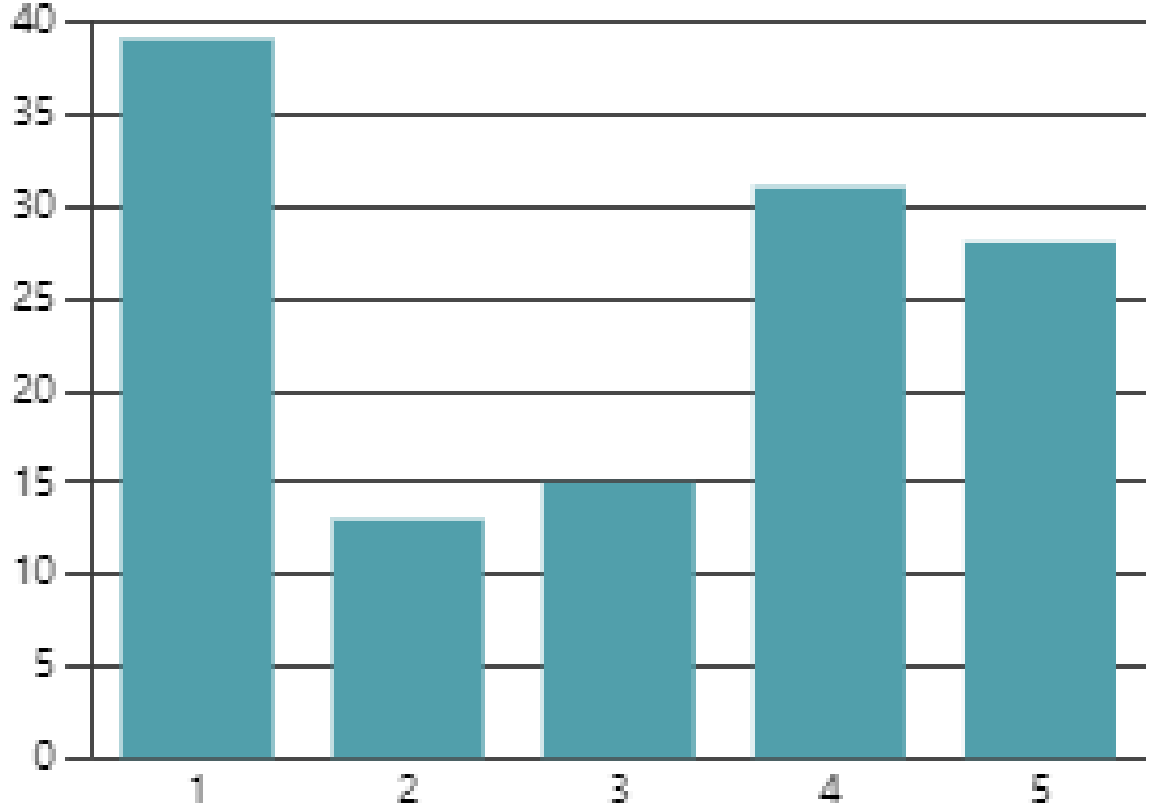


I PREFER A **LIGHTWEIGHT** HOIST PENDANT WITH FEWER FUNCTIONS TO A HEAVY ONE WITH MANY FUNCTIONS **IN THE FUTURE**?

Question 9

Grade 1 = insufficient

Grade 5 = fully satisfactory

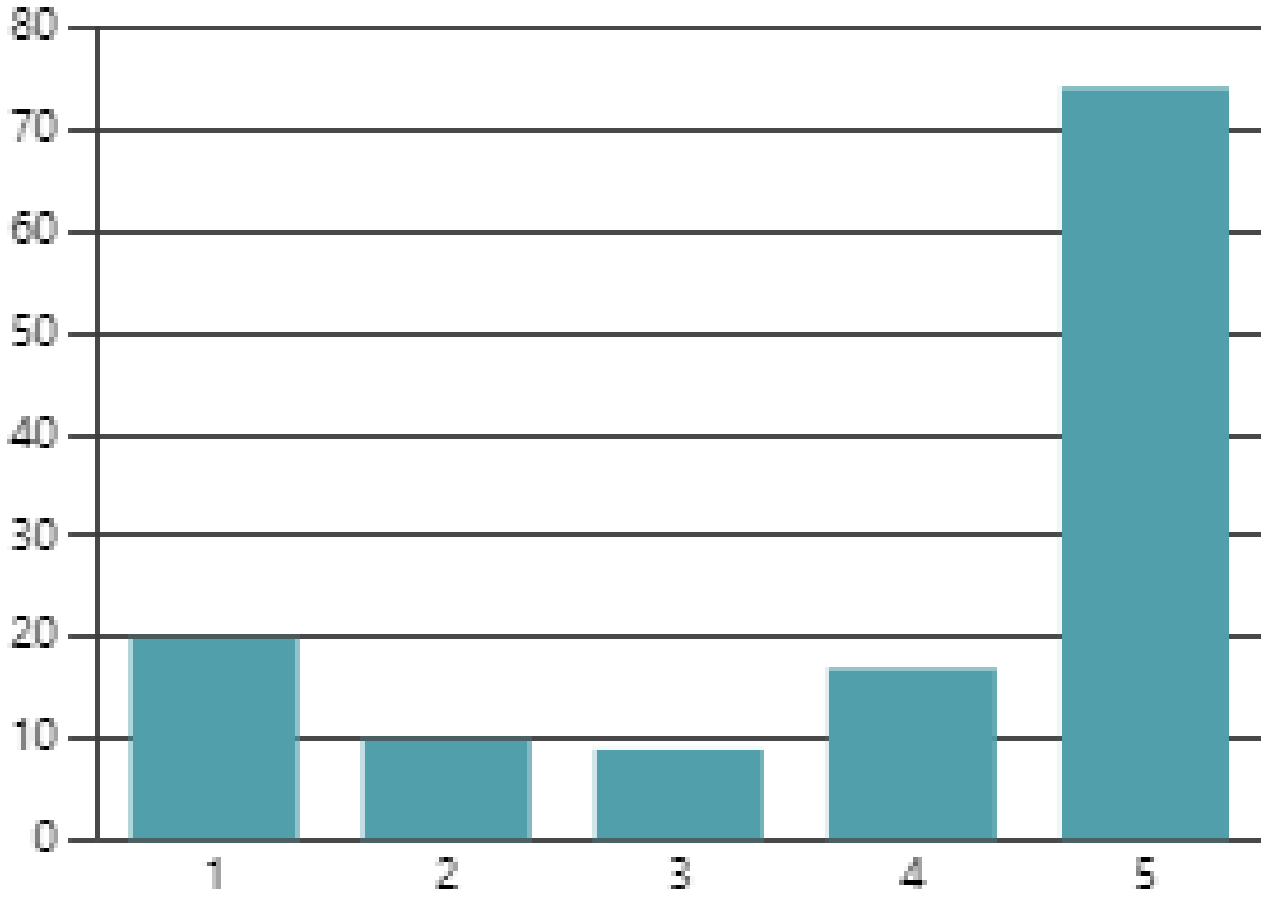


WE HAVE HOISTOPERATOR WHO HAVE DIFFICULTY OPERATING THE PENDANT DUE SMALLER HANDS AND SHORTER FINGER LENGTH ?

Question 11

Grade 1 = insufficient

Grade 5 = fully satisfactory

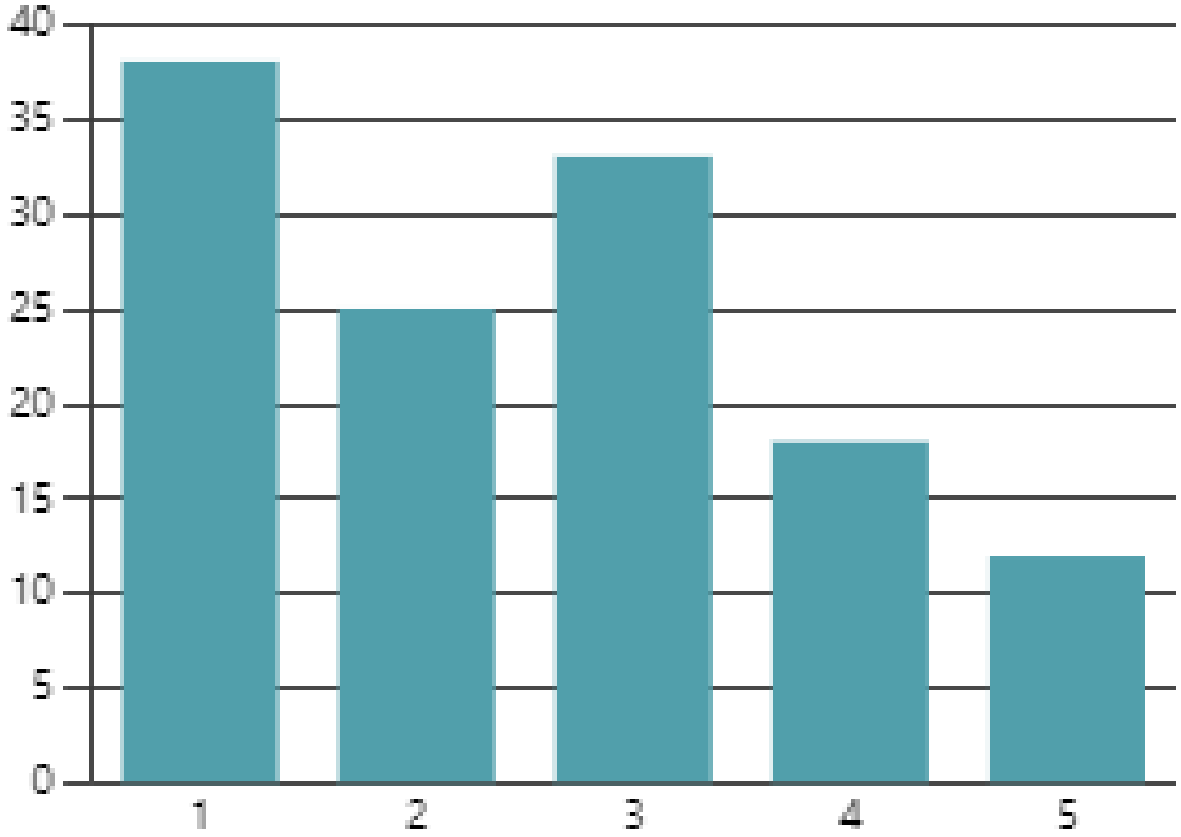


THE CABLE CUTTER SWITCH SHOULD BE ON THE HOIST PENDANT?

Question 15

Grade 1 = insufficient

Grade 5 = fully satisfactory

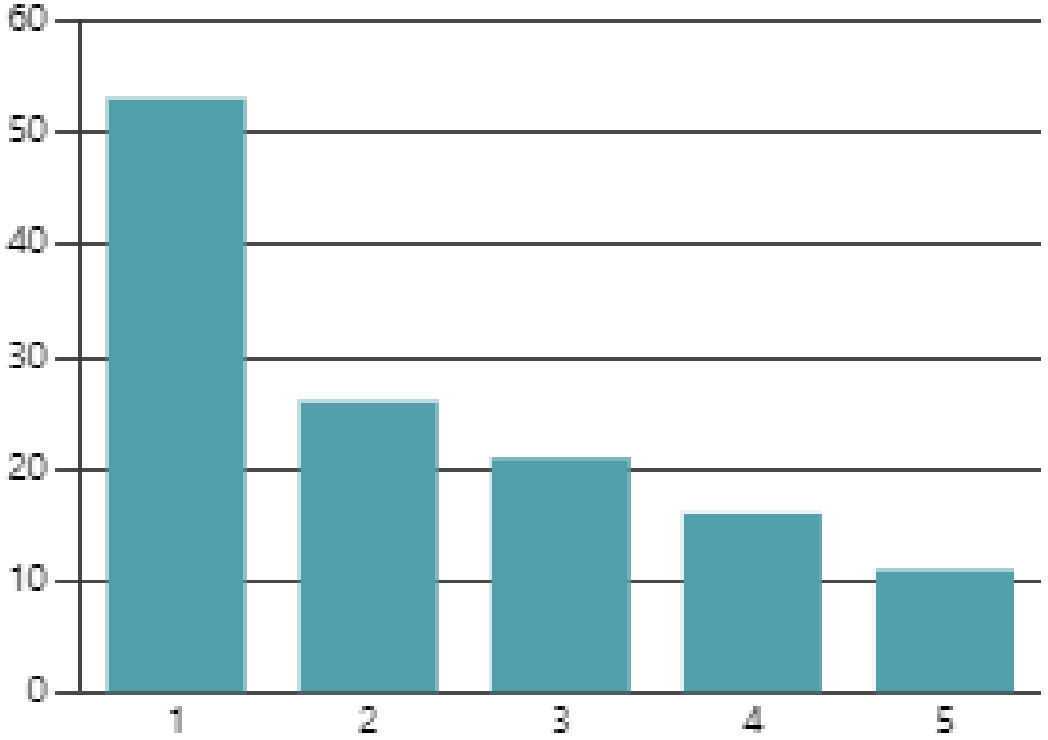


DUE TO THE POOR ERGONOMICS OF THE **CURRENT** HOIST PENDANTS, THERE WERE ALREADY SIGNS OF FATIGUE ON THE OPERATORS HAND?

Question 19

Grade 1 = insufficient

Grade 5 = fully satisfactory



IN OUR OPERATION, THERE HAVE ALREADY BEEN SAFETY OCCURRENCES DUE TO INCORRECT HANDLING OF THE HOIST PENDANT?

Question 20

Grade 1 = insufficient

Grade 5 = fully satisfactory

Summary

What do we need in the future?

- A pendant adapted to different hand sizes
- As simple as possible
- Possible work with gloves
- Ergonomically improved to reduce fatigue

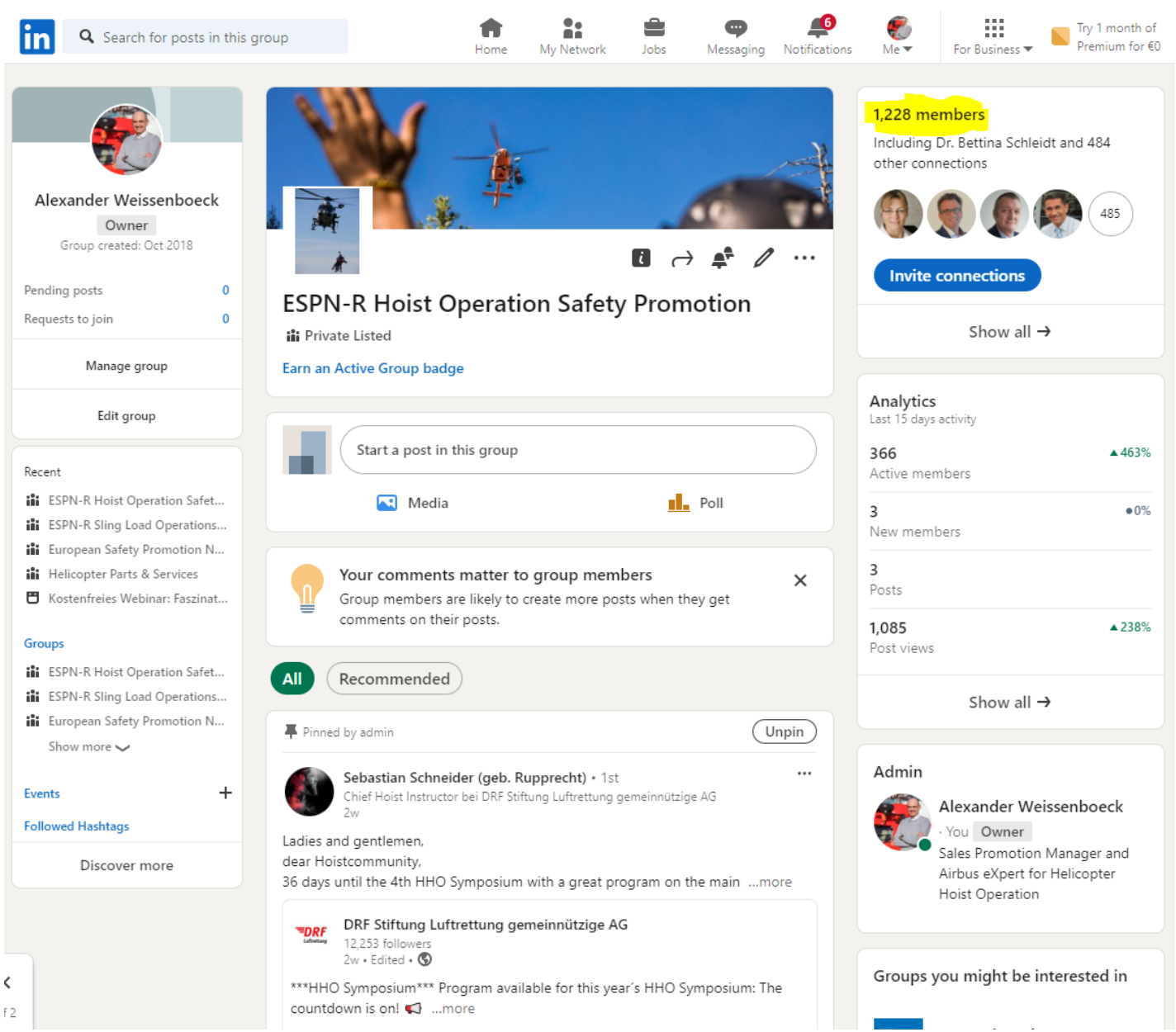
What happens next in this project?

- Cooperation with the TU Munich started in February 2024:
  - Consideration of ergonomics and optimization
  - Preparation of a thesis on this topic
- Frequent updates on the topic

Summary

What is the goal of the project?

- Create a whitepaper by the ESPN-R hoist group
- Support manufacturer & OEM´s by the operators practical use experience
- Enhance safety in operation
- Reduce potential fatigue



Join the LinkedIn ESPN-R Hoist Safety Promotion Community, link here

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alexander.weissenboeck@airbus.com
Mobile +49 151 171 26085

Thank you, for helping us to increase safety on hoist operations

Photo and Illustration Credits by: Klaus Hopf, Karl Mueller, Airbus Photo Library, Leonardo Photo Library, Rupert Gleissl, Christian Keller, Bernd Wuestenbecker, Bergwacht Bayern, WIKING Helikopter, DRF, ADAC, Goodrich