



EASA
European Aviation Safety Agency



EHEST – Specialist Team Ops & SMS

MARIA

Capt. Stefano BURIGANA

Elilombarda Safety Department
EHEST Specialist Team Leader

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Your safety is our mission.

Today's topic

MARIA

What is MARIA?

The Bowl model

A case study

The Analysis with MARIA

What's next?



MYSELF

Capt. Stefano BURIGANA

HEMS & Offshore Pilot

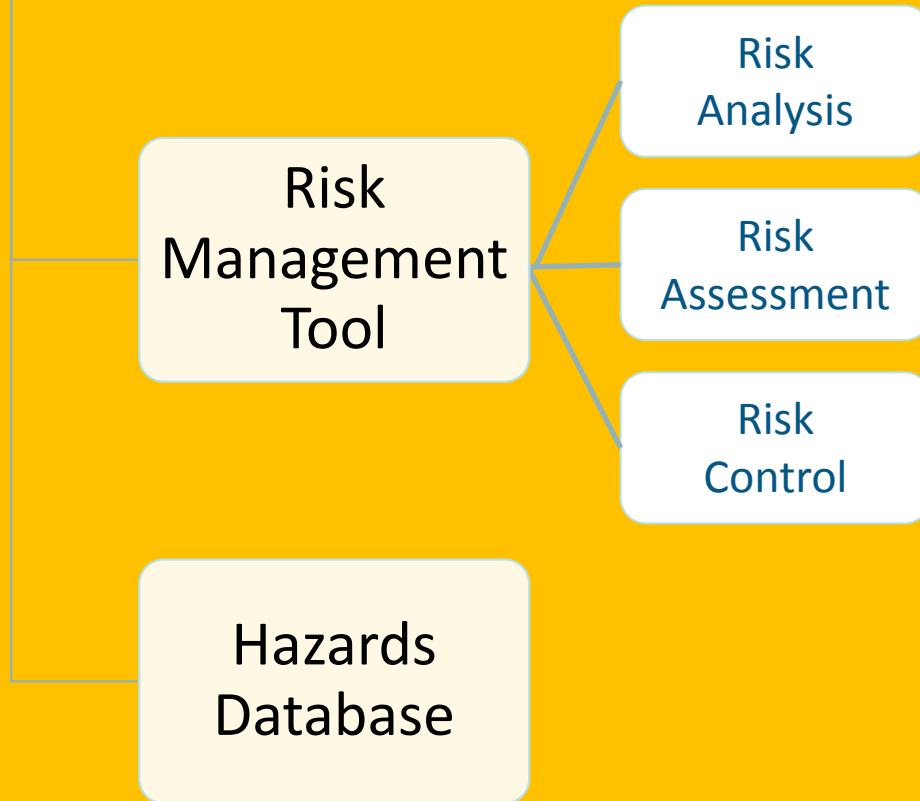
ELILOMBARDA
Safety Department

Safety & CRM Instructor

EHEST member

Specialist Team
Ops & SMS

WHAT IS **MARIA**?





Who is
MARIA
FOR?

Safety Department

Analysers

ATO

CAT

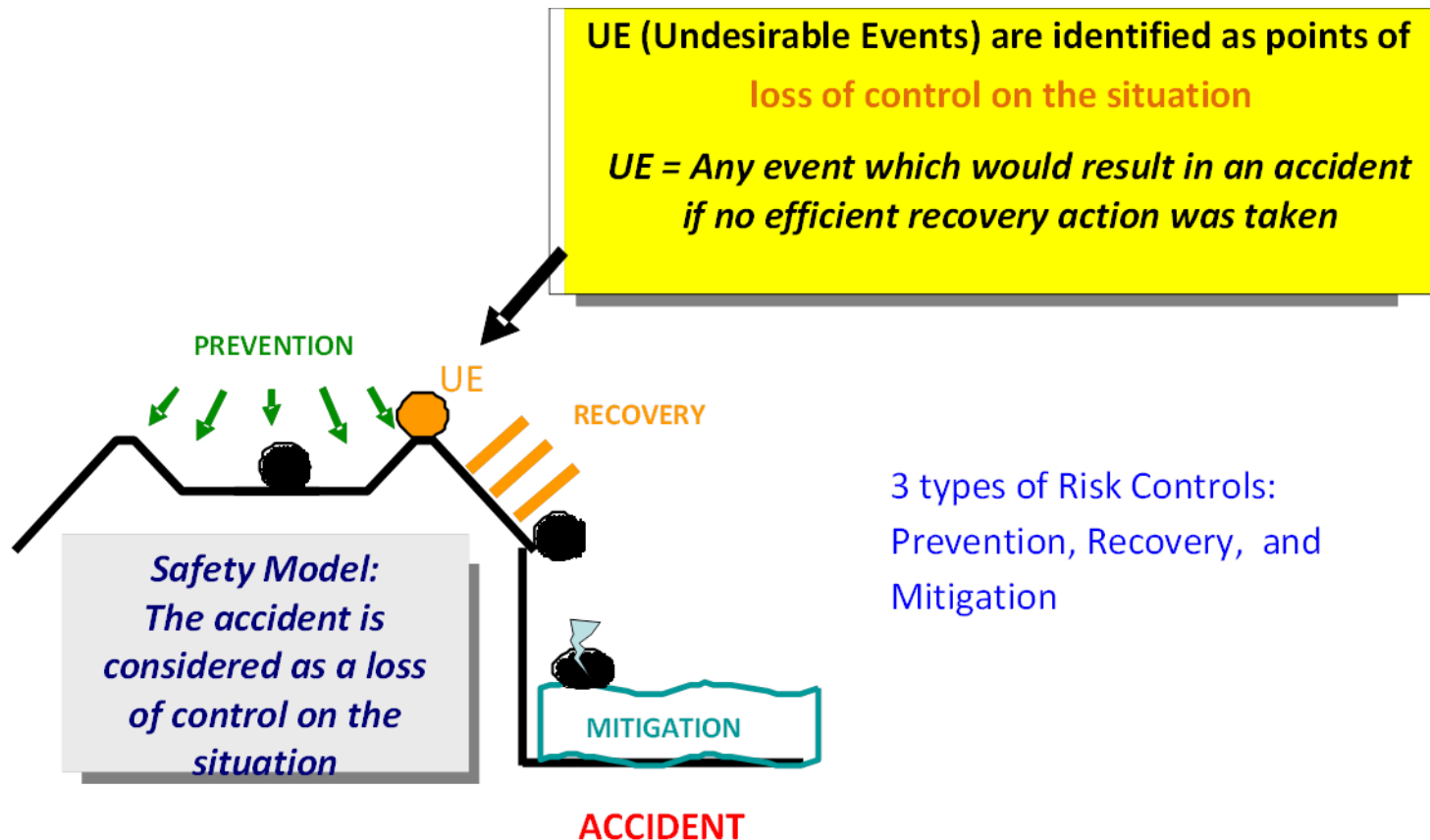
SPO

Complex & Non-complex operators

SAFETY BOWL



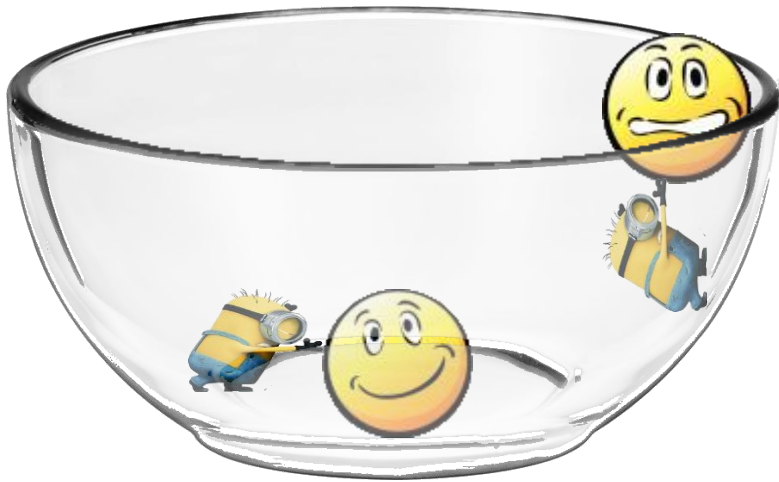
The 'Safety Bowl' Model (Source Dédale and Air France)



NORMAL, STANDARD OPERATIONS

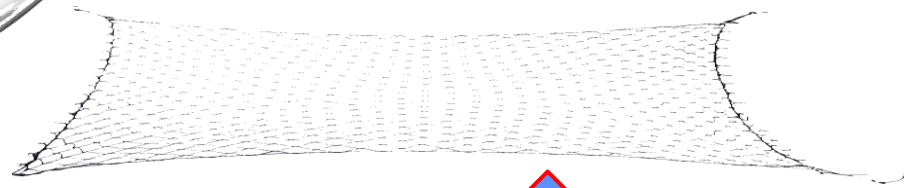


BORDERLINE OPERATIONS





BORDERLINE



**HAZARDOUS
EVENT**

BARRIER



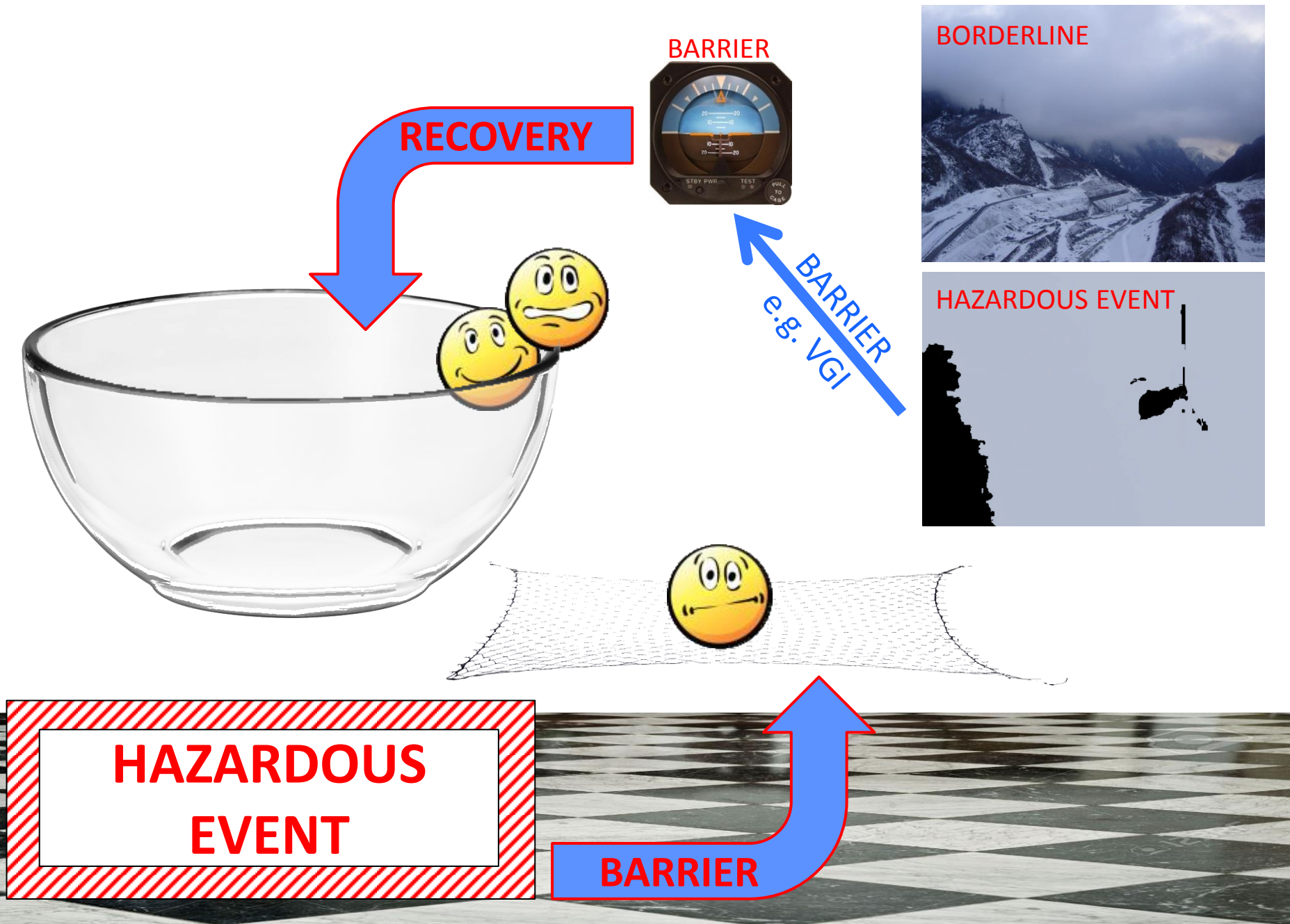


DEGRADED VISUAL ENVIRONMENT AND LOSS OF CONTROL

<http://essi.easa.europa.eu/ehest/>

EHEST → Publications → Video





BORDERLINE

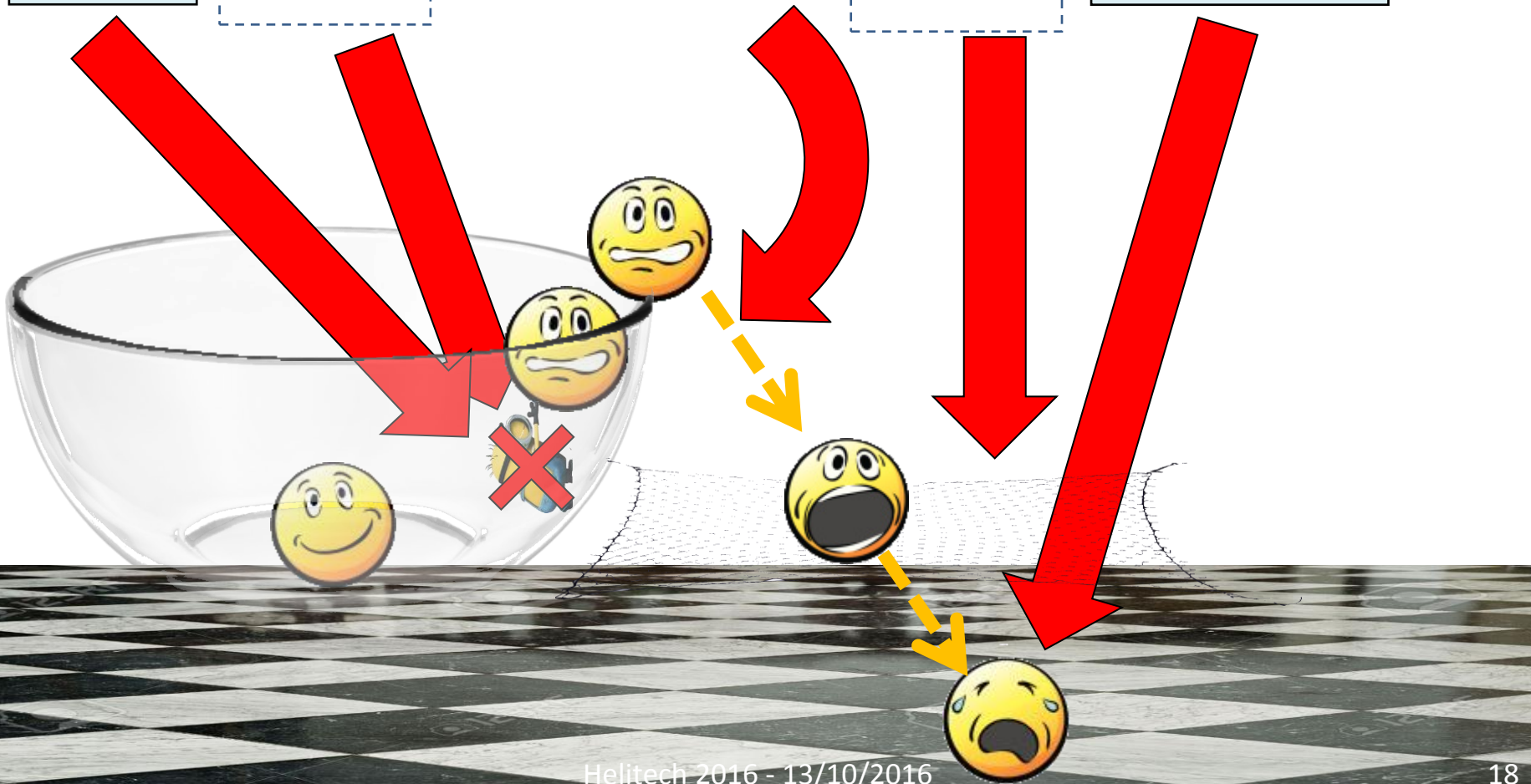
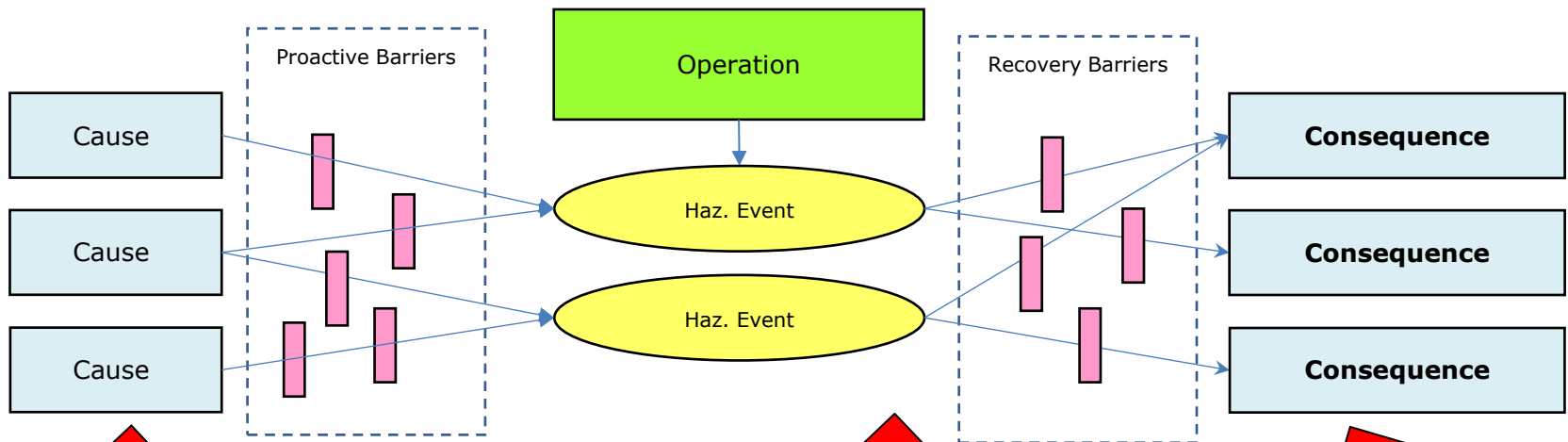


HAZARDOUS EVENT



HAZARDOUS
EVENT







So far...

...SO GOOD?

WELL,
what does

MARIA

look like?



MARIA (My Assessment of Risks for Incidents and Accidents)

EHEST RISK ASSESSMENT TOOL

- A - SELECT THE CASE STUDY
B - SELECT THE TOP EVENT
C - SELECT THE HAZARD OR THE CONSEQUENCE
D - SELECT THE BARRIERS
E - SELECT THE TASK

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Stefano BURIGANA
ELIOMBARDA

@ e-mail @

No.	Operation
OP 01	Sling load operations
New/Edit	
List	

REPORTS	RADEC
Report Op-Proact. Barr.	Cause Proactive Barrier
Report Op-Rec. Barr.	Hazardous Event Recovery Barrier
	Consequence

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations, landings, take offs
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area
New/Edit	
CA - PBs	
CA - HEs	
List	

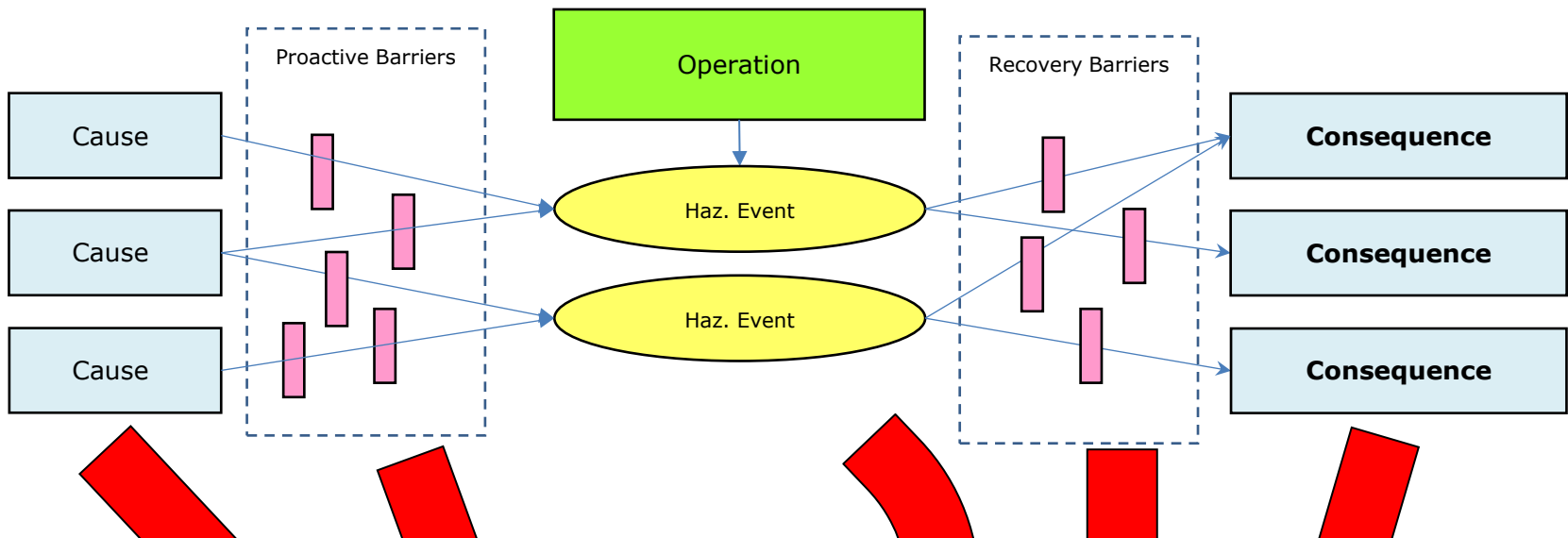
No.	Hazardous Event	Likel.
OP 01	HE 001 - Reduced separation with obstacles	2
OP 01	HE 002 - Reduced separation of the load from	3
OP 01	HE 003 - Degraded aircraft performance	1
OP 01	HE 004 - Degraded aircraft performance during	1
OP 01	HE 005 - Aircraft unintentionally deviates from	2
OP 01	HE 006 - Safety measures not respected by per	3
OP 01	HE 007 - Load is not properly prepared (sling l	3
OP 01	HE 008 - Unexpected technical problem relate	3
OP 01	HE 009 - Unexpected technical problem on air	3
OP 01	HE 010 - Lose objects moved by the rotor dow	3
OP 01	HE 011 - Not accurate or missing mission plan	2
New/Edit		
HE - CAs		
HE - COs		
List		

No.	Consequence	Risk
HE 001	CO 001 - Aircraft crash	2 E
HE 001	CO 002 - Property damage on ground	3 C
HE 001	CO 004 - Injury to flight crew or crew member	3 C
HE 001	CO 005 - Injury to passengers	2 C
HE 001	CO 006 - Aircraft not available	3 B
HE 001	CO 007 - Pilot/personnel not available	3 B
HE 001	CO 009 - Rules infringement	4 B
HE 001	CO 011 - Main rotor blades strike a ground ob	3 C
HE 001	CO 012 - Tail rotor blades strike a ground obst	3 C
HE 001	CO 013 - Impact with wires or cables	2 E
New/Edit		
CO - HEs		
CO - RBs		
List		

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training
New/Edit	
PB - CAs	
List	

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15
Record 1 of 2			
New/Edit			
List			

No.	Recovery Barrier
CO 001	RB 001, Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system
New/Edit	
RB - COs	
List	



2.1 - EHEST MARIA v. 1 - 2015-10-01 - Sling Load.odb : frm_05_._MainBowTie - OpenOffice Base: Database Form

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MARIA (My Assessment of Risks for Incidents and Accidents)

EHEST RISK ASSESSMENT TOOL

A - SELECT THE CASE STUDY
 B - SELECT THE TOP EVENT
 C - SELECT THE HAZARD OR THE CONSEQUENCE
 D - SELECT THE BARRIERS
 E - SELECT THE TASK

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 Stefano BURIGANA
 ELIOMBARDIA
 @ e-mail @

No.	Operation
OP 01	Sling load operations

New/Edit List

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations, landings, take offs
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area

New/Edit CA - PBs CA - HEs List

No.	Hazardous Event	Likel.
OP 01	HE 001 - Reduced separation with obstacles	2
OP 01	HE 002 - Reduced separation of the load from	3
OP 01	HE 003 - Degraded aircraft performance	1
OP 01	HE 004 - Degraded aircraft performance during	1
OP 01	HE 005 - Aircraft unintentionally deviates from	2
OP 01	HE 006 - Safety measures not respected by per	3
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OP 01	HE 008 - Unexpected technical problem relate	3
OP 01	HE 009 - Unexpected technical problem on air	3
OP 01	HE 010 - Lose objects moved by the rotor dow	3
OP 01	HE 011 - Not accurate or missing mission plan	2

New/Edit HE - CAs HE - COs List

No.	Consequence	Risk
HE 001	CO 001 - Aircraft crash	2 E
HE 001	CO 002 - Property damage on ground	3 C
HE 001	CO 004 - Injury to flight crew or crew member	3 C
HE 001	CO 005 - Injury to passengers	2 C
HE 001	CO 006 - Aircraft not available	3 B
HE 001	CO 007 - Pilot/personnel not available	3 B
HE 001	CO 009 - Rules infringement	4 B
HE 001	CO 011 - Main rotor blades strike a ground ob	3 C
HE 001	CO 012 - Tail rotor blades strike a ground obst	3 C
HE 001	CO 013 - Impact with wires or cables	2 E

New/Edit CO - HEs CO - RBs List

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
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CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

New/Edit PB - CAs List

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

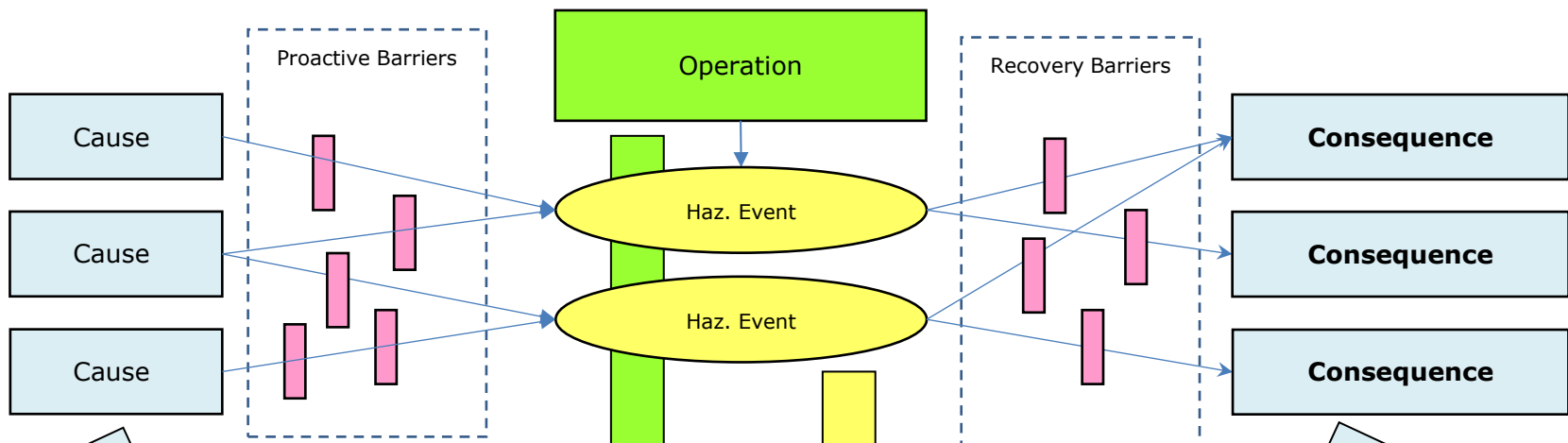
Record 1 of 2

New/Edit List

No.	Recovery Barrier
CO 001	RB 001, Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

New/Edit RB - COs List

Record 1 of 1



2.1 - EHEST MARIA v. 1 - 2015-10-01 - Sling Load.oo

MainBowTie - OpenOffice Base Form

MARIA (My Assessment Risks for Accidents)

THE CASE STUDY
THE TOP EVENT
THE HAZARD OR THE CONSEQUENCE
THE TASK

Light & Courtesy
BURIGANA
BARDA
e-mail @

Report
Op-Prod
Report
Op-Rec

RADEC
Cause
Proactive Barrier
Hazardous Event
Recovery Barrier
Consequence

No.	Operation
OP 01	Sling load operations

New/Edit

No.	Hazardous Event
OP 01	HE 001 - Reduced separation with obstacles
OP 01	HE 002 - Reduced separation of the load from 3
OP 01	HE 003 - Degraded aircraft performance 1
OP 01	HE 004 - Degraded aircraft performance during 1
OP 01	HE 005 - Aircraft unintentionally deviates from 2
OP 01	HE 006 - Safety measures not respected by per 3
OP 01	HE 007 - Load is not properly prepared (sling l 3
OP 01	HE 008 - Unexpected technical problem relate 3
OP 01	HE 009 - Unexpected technical problem on air 3
OP 01	HE 010 - Lose objects moved by the rotor dow 3
OP 01	HE 011 - Not accurate or missing mission plan 2

New/Edit

No.	Consequence
HE 001	Aircraft crash 2 E
HE 001	Property damage on ground 3 C
HE 001	Injury to flight crew or crew member 3 C
HE 001	Injury to passengers 2 C
HE 001	Aircraft not available 3 B
HE 001	Pilot/personnel not available 3 B
HE 001	Rules infringement 4 B
HE 001	Main rotor blades strike a ground ob 3 C
HE 001	Tail rotor blades strike a ground obst 3 C
HE 001	Impact with wires or cables 2 E

CO - HEs CO - RBs List

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

New/Edit

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

Record 1 of 2

No.	Recovery Barrier
CO 001	Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

New/Edit

Record 1 of 1

CASE STUDY

**13 March 2014
19:26 hrs**

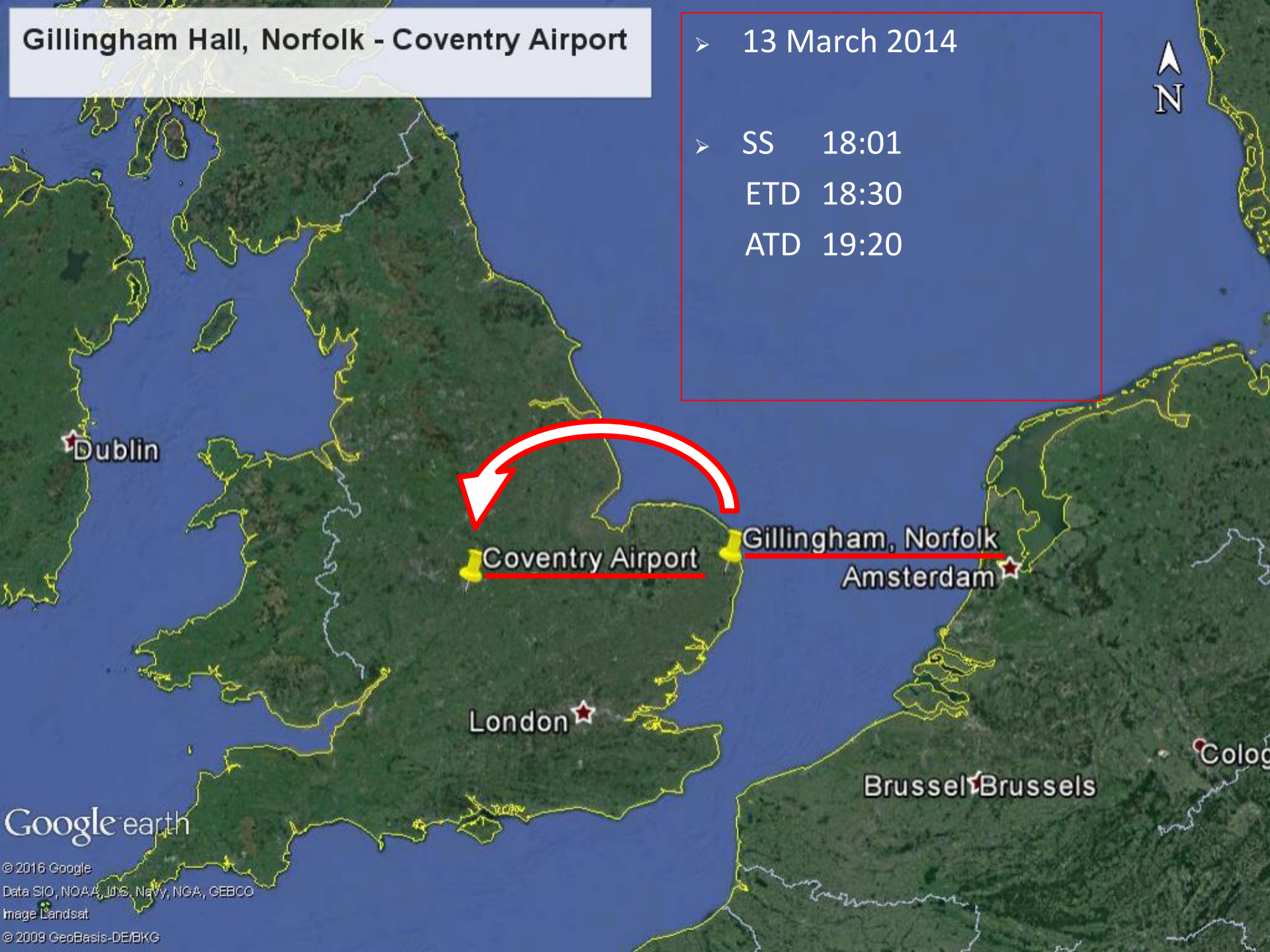
**Agusta AW139
G-LBAL**

**Gillingham Hall,
Norfolk**



Gillingham Hall, Norfolk - Coventry Airport

- 13 March 2014
- SS 18:01
ETD 18:30
ATD 19:20



Google earth



Conversation between the two pilots before the passengers arrival

I don't mind
telling you I'm not
very happy about
lifting out of here.



It should be ok it's...
I don't think it is
because you can
still see the moon.



The moon was waxing gibbous, at which 91% of its disc was lit, bearing 130°T from the helicopter's location, at an elevation of 37° above the horizon.



We should go,
sir.



The co-pilot remarked to the commander that he had informed the passengers of the urgent need to depart, and that if a further delay in their embarkation had ensued, departure would not be possible.





The commander briefed the co-pilot

Right all I'm going to do,
take it over to the centre of the field, and then
just pull the power, we'll go vertically up,
I'll go for the strobe and just make sure the
heading bug is central for us if you can".







The helicopter then began to climb, almost vertically at first.

At a height of approximately 32 ft agl, its pitch attitude changed from the slightly nose-up hover attitude, pitching nose-down, before the helicopter began picking up forward speed, continuing to climb.





At about 120 ft above the ground and with a nose-down pitch attitude of approximately 15° , the co-pilot said “**nose down**”.

But more forward cyclic input was applied.



In the following second the helicopter crossed the boundary trees and started to descend with increasing ground speed, forward cyclic input and nose-down pitch attitude.

Progressively more collective was also being applied, with the resultant increase in engine torques.



The co-pilot repeated the “**nose down**” words.



The nose-down pitch attitude started to reduce from the peak recorded value of 35° as the helicopter descended through 100 ft agl.

The collective input progressed to 100%, the engine torques increased but the rotor speed could not be sustained at the nominal 102% and started to reduce.



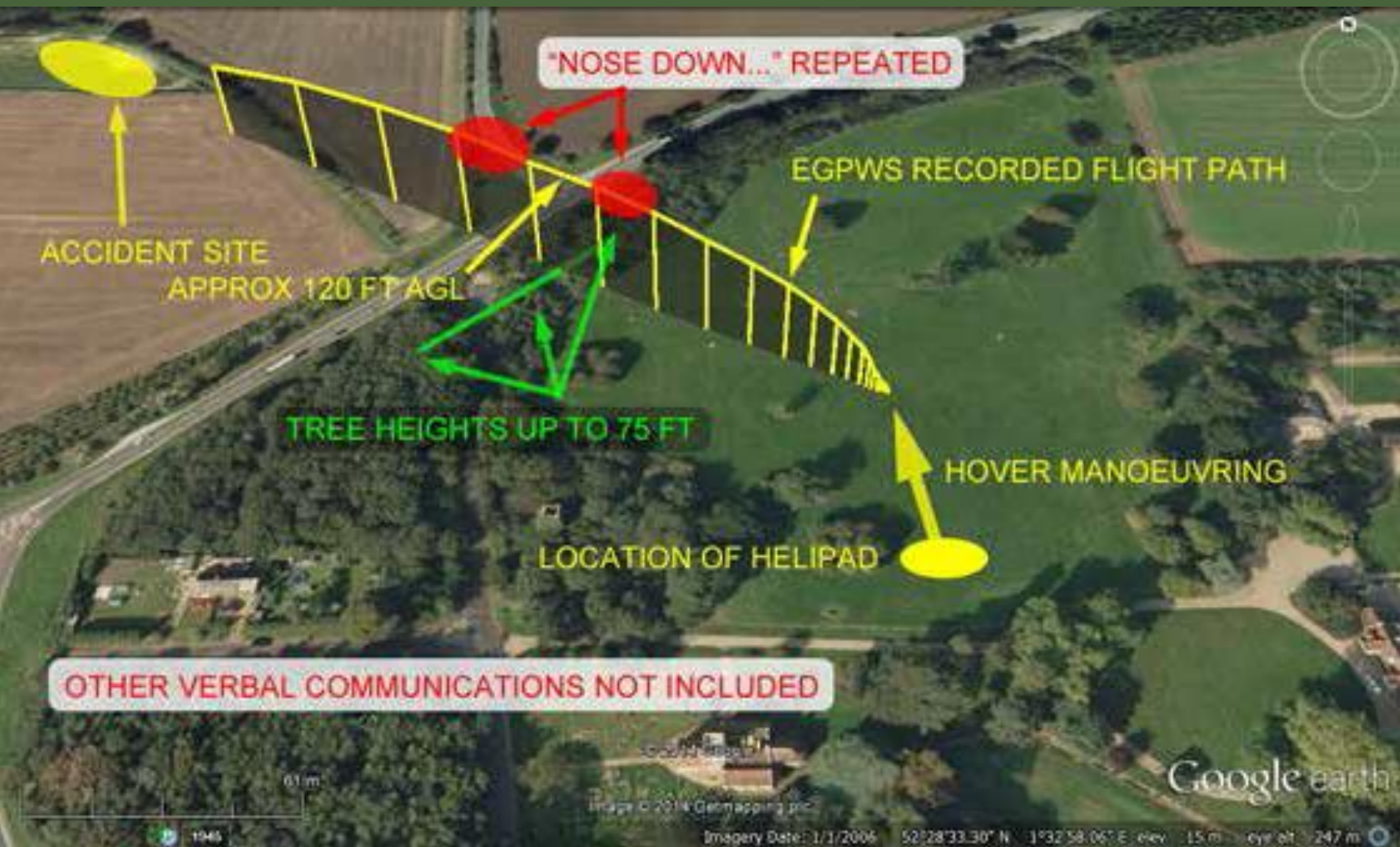
The last data in the combined voice and flight data recorder (CVFDR) was:

- 25° nose-down pitch attitude
- 82 ft above the ground,
- descent at 2,400 ft/min,
- ground speed: 90 kt.



The helicopter's heading remained in the range 297-305° from prior to commencement of the vertical climb until impact.

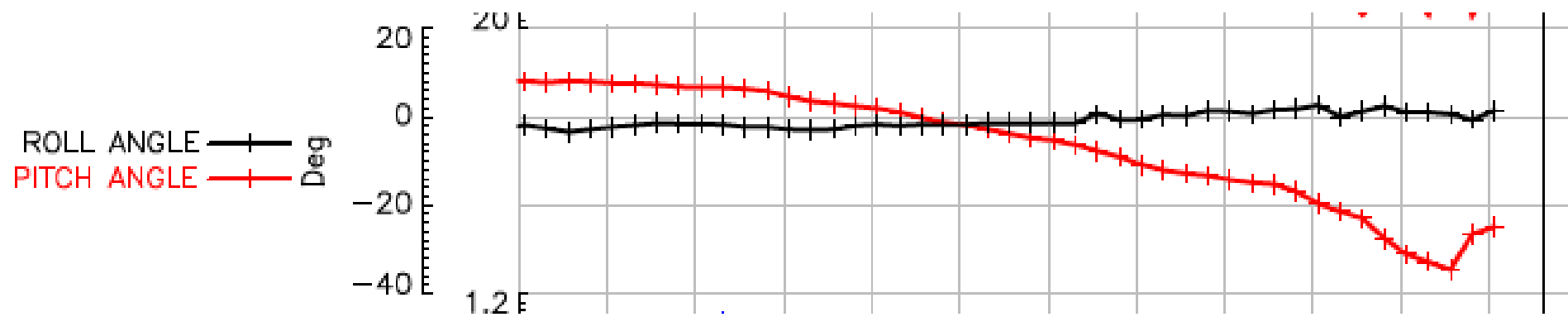
No flight director modes were selected during the flight.

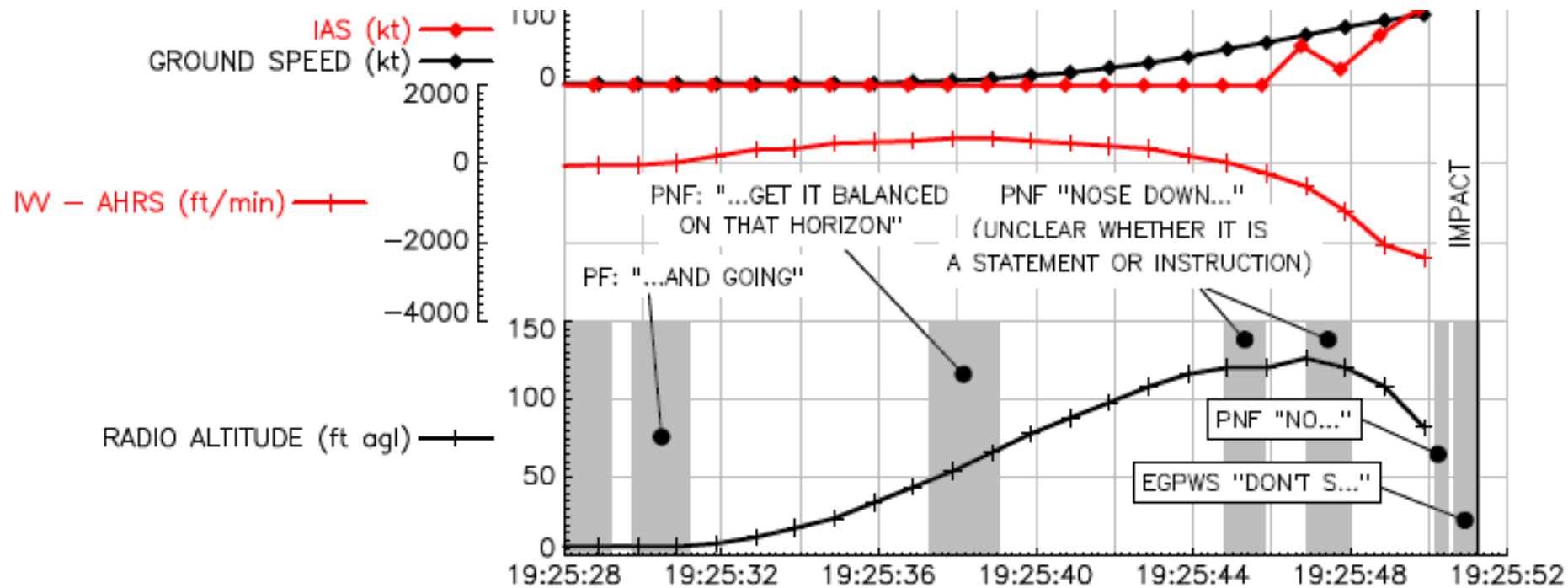




PERCEPTIONS, ILLUSIONS

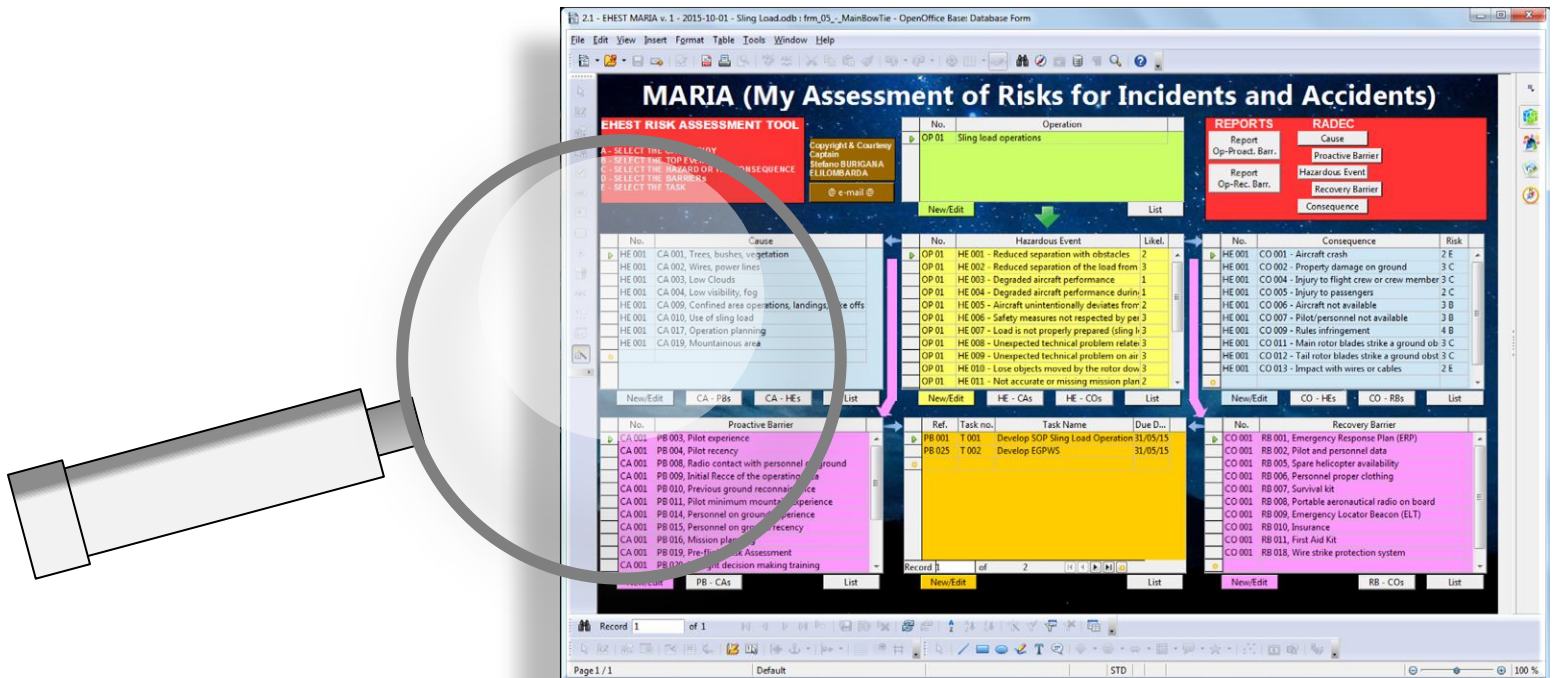
- Acceleration forces front-to-back
(perception: “nose is up!”)
- Car lights driving toward the helicopter
(illusion: “climbing too fast! Nose is up!”)
- Anemometer reading “0”
(perception: “not moving forward!”)

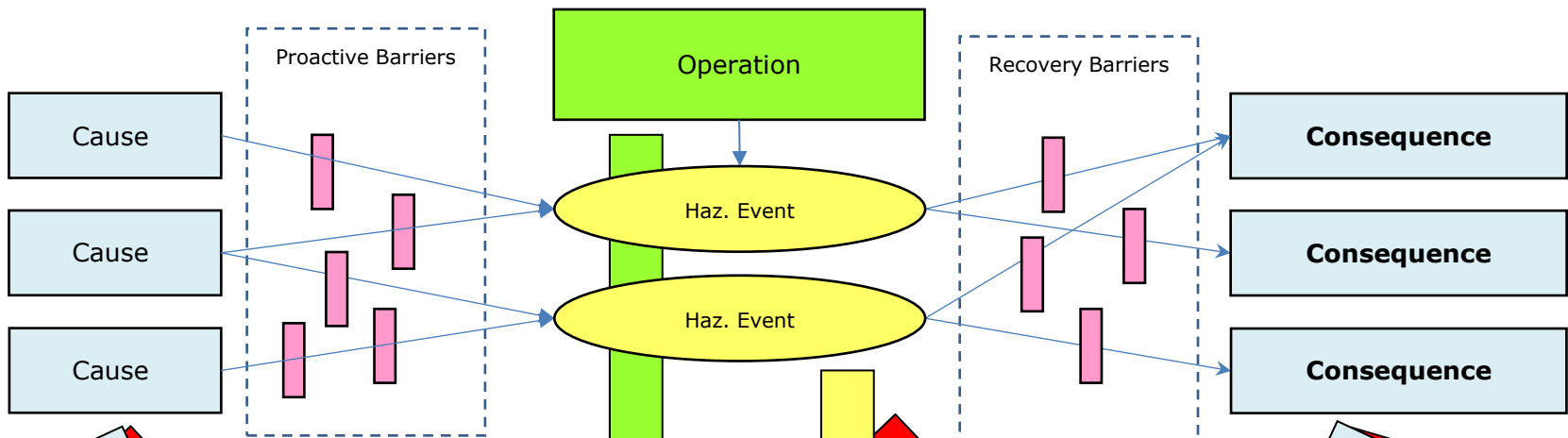






ANALYSIS WITH MARIA





MARIA (My Assessment Risks for Accidents)

THE CASE STUDY
THE TOP EVENT
THE HAZARD OR THE CONSEQUENCE
THE BARRIERS TASK

RADEC

- Cause
- Proactive Barrier
- Hazardous Event
- Recovery Barrier
- Consequence

Operation

No.	Operation
OP 01	Sling load operations

Hazardous Event

No.	Hazardous Event
HE 001	HE 001 - Reduced separation with obstacles
OP 01	HE 002 - Reduced separation of the load from 3
OP 01	HE 003 - Degraded aircraft performance 1
OP 01	HE 004 - Degraded aircraft performance during 1
OP 01	HE 005 - Aircraft unintentionally deviates from 2
OP 01	HE 006 - Safety measures not respected by per 3
OP 01	HE 007 - Load is not properly prepared (sling l 3
OP 01	HE 008 - Unexpected technical problem relate 3
OP 01	HE 009 - Unexpected technical problem on air 3
OP 01	HE 010 - Lose objects moved by the rotor dow 3
OP 01	HE 011 - Not accurate or missing mission plan 2

Consequence

No.	Consequence
HE 001	Aircraft crash 2 E
HE 001	Property damage on ground 3 C
HE 001	Injury to flight crew or crew member 3 C
HE 001	Injury to passengers 2 C
HE 001	Aircraft not available 3 B
HE 001	Pilot/personnel not available 3 B
HE 001	Rules infringement 4 B
HE 001	Main rotor blades strike a ground ob 3 C
HE 001	Tail rotor blades strike a ground obst 3 C
HE 001	Impact with wires or cables 2 E

Proactive Barrier

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

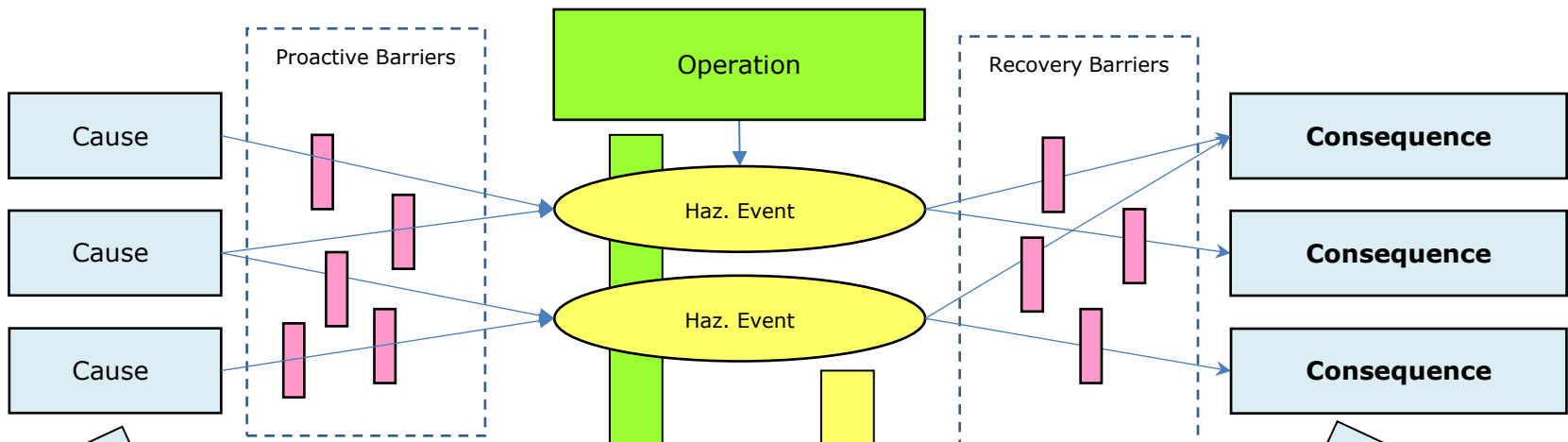
Recovery Barrier

No.	Recovery Barrier
CO 001	Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

Task Name

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

Record 1 of 2



2.1 - EHEST MARIA v. 1 - 2015-10-01 - Sling Load...

Edit View Insert Format Table Tools Win

MARIA (My Assessment of Risks for Accidents & Incidents)

THE CASE STUDY
THE TOP EVENT
THE HAZARD OR THE CONSEQUENCE
THE BARRIERS TASK

Light & Co...
BURIC NA
BARD...
e-mail...

No. Operation
OP 01 Sling load operations
New/Edit

No. Hazardous Event
HE 001 - Reduced separation with obst...
OP 01 HE 001 - Reduced separation with obst...
OP 01 HE 002 - Degraded aircraft performance...
OP 01 HE 003 - Degraded aircraft performance...
OP 01 HE 004 - Degraded aircraft performance...
OP 01 HE 005 - Aircraft unintentionally deviates from...
OP 01 HE 006 - Safety measures not respected by per...
OP 01 HE 007 - Load is not properly prepared (sling l...
OP 01 HE 008 - Unexpected technical problem relate...
OP 01 HE 009 - Unexpected technical problem on air...
OP 01 HE 010 - Lose objects moved by the rotor dow...
OP 01 HE 011 - Not accurate or missing mission plan 2

REPO...
Repd...
Op-Pro...
Repd...
Op-Re...

RADEC
Cause
Proactive Barrier
Hazardous Event
Recovery Barrier
Consequence

Consequence
HE 001 Aircraft crash 2 E
HE 001 Property damage on ground 3 C
HE 001 Injury to flight crew or crew member 3 C
HE 001 Injury to passengers 2 C
HE 001 Aircraft not available 3 B
HE 001 Pilot/personnel not available 3 B
HE 001 Rules infringement 4 B
HE 001 Main rotor blades strike a ground ob 3 C
HE 001 Tail rotor blades strike a ground obst 3 C
HE 001 Impact with wires or cables 2 E

CO - HEs CO - RBs List

No. Proactive Barrier
CA 001 PB 003, Pilot experience
CA 001 PB 004, Pilot recency
CA 001 PB 008, Radio contact with personnel on ground
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Ref. Task no. Task Name Due D...
PB 001 T 001 Develop SOP Sling Load Operation 31/05/15
PB 025 T 002 Develop EGPWS 31/05/15

No. Recovery Barrier
CO 001 RB 001, Emergency Response Plan (ERP)
CO 001 RB 002, Pilot and personnel data
CO 001 RB 005, Spare helicopter availability
CO 001 RB 006, Personnel proper clothing
CO 001 RB 007, Survival kit
CO 001 RB 008, Portable aeronautical radio on board
CO 001 RB 009, Emergency Locator Beacon (ELT)
CO 001 RB 010, Insurance
CO 001 RB 011, First Aid Kit
CO 001 RB 018, Wire strike protection system

New/Edit PB - CAs List New/Edit HE - CAs HE - COs List New/Edit CO - HEs CO - RBs List

Record 1 of 1

No.	Operation
▶ OP 001	Accident AW139, G-LBAL - Gillingham Hall, Norfolk
New/Edit	List

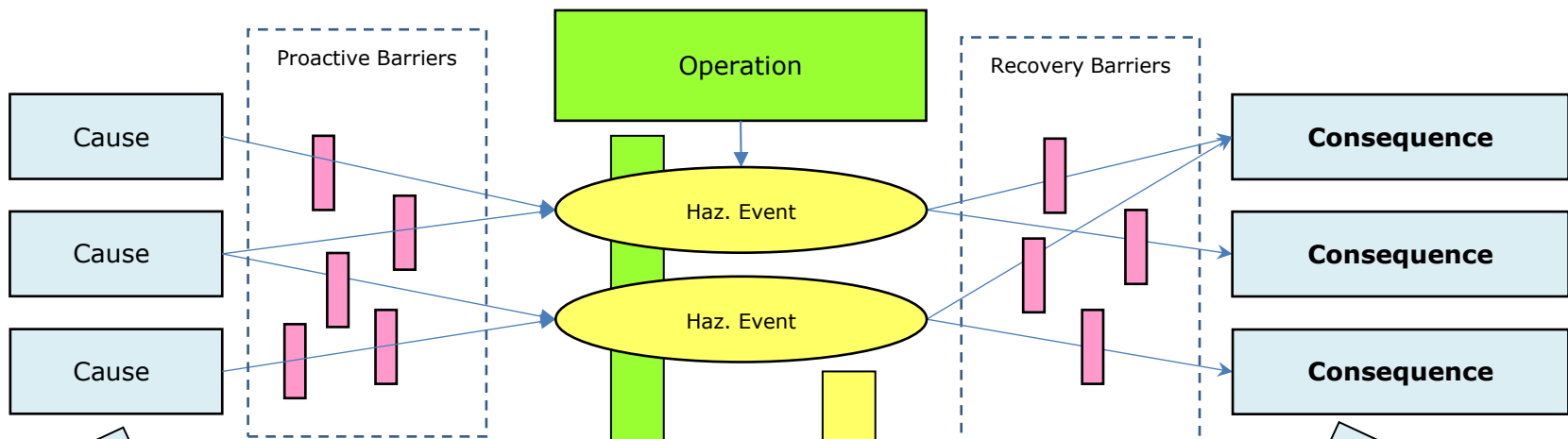
OPERATION

	No.	Operation
▶	OP 001	Accident AW139, G-LBAL - Gillingham Hall, Nor
⚙		

INSERT, DELETE OR UPDATE OPERATIONS

No.	Operation	Note	Initial Date	Revision Date
OP 001	Accident AW139, G-LBAL - Gillingham Hall, Norfolk			

Record di dati 1 da 1



2.1 - EHEST MARIA v.1 - 2015-10-01 - Sling Load.oo

MainBowTie - OpenOffice Base Form

MARIA (My Assessment Risks for Accidents)

THE CASE STUDY
THE TOP EVENT
THE HAZARD OR THE CONSEQUENCE
THE TASK

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area

New/Edit CA - PBs CA - H

No.	Operation
OP 01	Sling load operations

New/Edit OP - COs

No.	Hazardous Event
OP 01	HE 001 - Reduced separation with obstacles
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New/Edit HE - CAs HE - COs

No.	Consequence
HE 001	Aircraft crash 2 E
HE 001	Property damage on ground 3 C
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HE 001	Injury to passengers 2 C
HE 001	Aircraft not available 3 B
HE 001	Pilot/personnel not available 3 B
HE 001	Rules infringement 4 B
HE 001	Main rotor blades strike a ground ob 3 C
HE 001	Tail rotor blades strike a ground obst 3 C
HE 001	Impact with wires or cables 2 E

New/Edit CO - HEs CO - RBs

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

New/Edit PB - CAs

Task no.	Task Name	Due D...
T 001	Develop EGPWS	31/05/15
T 002	Develop EGPWS	31/05/15

New/Edit Task - COs

No.	Recovery Barrier
CO 001	RB 001, Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

New/Edit RB - COs

Record 1 of 1

HAZARDS?...



- Poor decision making
- Lack of meteorological - Information
- Lack of a pre-take-off briefing between pilots
- Use of non-standard or not trained procedures - Take-off
- Degraded Visual Conditions (DVE) - Take-off
- Inadvertent IMC - Take-off
- Lack of IMC instrument scan
- Non-standard or incorrect phraseology inside the cabin
- Lack of Crew Resource Management (CRM)
- Lack of multi-crew training

HAZARDOUS EVENT

Haz. Event n.

HE 001

Description

Poor decision making

Note

The pilot takes decisions pushed to the limit due to external pressure, poor decision making or lack of information

Date Inserted

16/09/16

Revision

Likelihood

5 - Frequent - Likely to occur many times

Risk Matrix

References

Operation

No.	Operation
OP 001	Accident AW139, G-LBAL - Gillingham Hall, No

B - LINK EACH OPERATION WITH RELATED HAZ. EVENTS

1 - Select the Operation element
2 - Add, delete or edit related Hazardous Events

Hazardous Events related to the Operation

Operation	Related Hazardous Events
OP 001	HE 001, Poor decision making
OP 001	HE 002, Lack of meteorological - Information
OP 001	HE 003, Lack of a pre-take-off briefing between pilots
OP 001	HE 004, Use of non-standard or not trained procedures - Take-off
OP 001	HE 005, Degraded Visual Conditions (DVE) - Take-off
OP 001	HE 006, Inadvertent IMC - Take-off
OP 001	HE 007, Lack of IMC instrument scan
OP 001	HE 008, Non-standard or incorrect phraseology inside the cabin
OP 001	HE 009, Lack of Crew Resource Management (CRM)

Record di dati 1 da 11

A - ADD, DELETE OR EDIT HAZARDOUS EVENT LIST

Hazardous Event List

ID Haz. Event	Description	Likelihood
HE 001	Poor decision making	5
HE 002	Lack of meteorological - Information	3
HE 003	Lack of a pre-take-off briefing between pilots	4
HE 004	Use of non-standard or not trained procedures - Take-off	4
HE 005	Degraded Visual Conditions (DVE) - Take-off	3
HE 006	Inadvertent IMC - Take-off	2
HE 007	Lack of IMC instrument scan	4
HE 008	Non-standard or incorrect phraseology inside the cabin	5
HE 009	Lack of Crew Resource Management (CRM)	5
HE 010	Lack of multi-crew training	5

Record di dati 1 da 12

No.	Hazardous Event	Likel.
-----	-----------------	--------

HAZARDOUS EVENT

Haz. Event n. **HE 012**

Description **Loss of Control in flight**

Note **LOC-I**

Date Inserted **16/09/16**

Likelihood **2 - Rare - Very unlikely**

Risk Matrix

References

Operation

No.	Operation
OP 001	Accident AW139, G-LBAL - Gillingham Hall, No

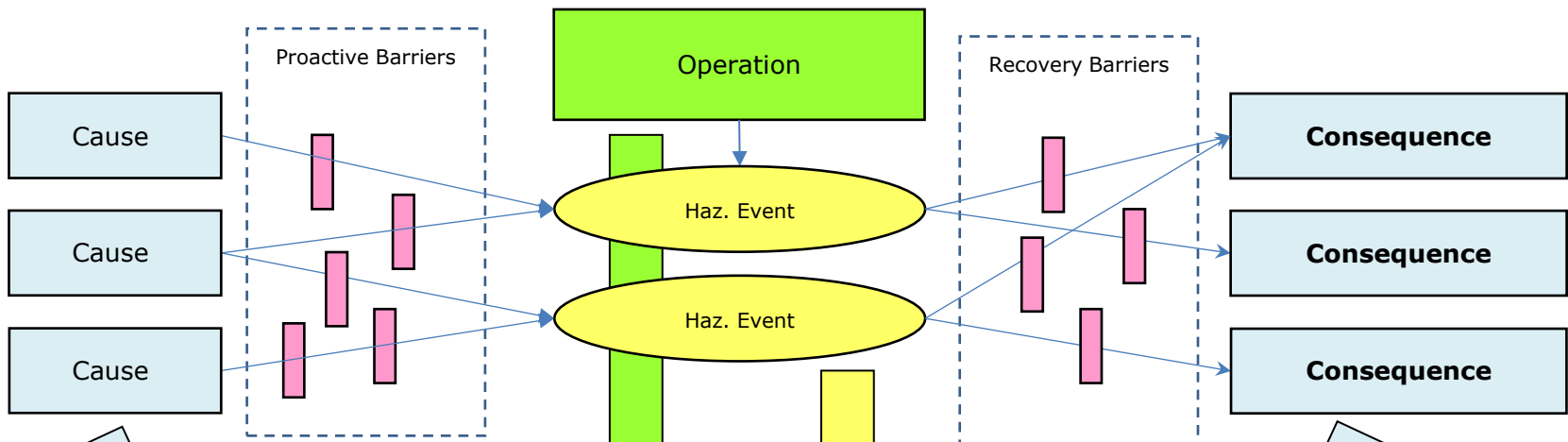
B - LINK EACH OPERATION WITH RELATED HAZ. EVENTS

- 1 - Select the Operation element
- 2 - Add, delete or edit related Hazardous Events

Hazardous Events related to the Operation

Operation	Related Hazardous Events
OP 001	HE 004, Use of non-standard or not trained procedures - Take-off
OP 001	HE 005, Degraded Visual Conditions (DVE) - Take-off
OP 001	HE 006, Inadvertent IMC - Take-off

- HE 001, Poor decision making
- HE 002, Lack of meteorological - Information
- HE 003, Lack of a pre-take-off briefing between pilots
- HE 004, Use of non-standard or not trained procedures - Take-off
- HE 005, Degraded Visual Conditions (DVE) - Take-off
- HE 006, Inadvertent IMC - Take-off
- HE 007, Lack of IMC instrument scan
- HE 008, Non-standard or incorrect phraseology inside the cabin
- HE 009, Lack of Crew Resource Management (CRM)
- HE 010, Lack of multi-crew training
- HE 011, EGPWS advising too late
- HE 012, Loss of Control in flight



The screenshot displays the MARIA software interface, which is a risk assessment tool. The main window is titled "MARIA (My Assessment of Risks for Incidents and Accidents)". It features several panels and tables for data entry and analysis.

Left Panel: Cause

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area

Top Center Panel: Operation

No.	Operation
OP 01	Sling load operations

Center Panel: Hazardous Event

No.	Hazardous Event
HE 001	HE 001 - Reduced separation with obstacles
HE 001	HE 002 - Reduced separation of the load from 3
HE 001	HE 003 - Degraded aircraft performance 1
HE 001	HE 004 - Degraded aircraft performance during 1
HE 001	HE 005 - Aircraft unintentionally deviates from 2
HE 001	HE 006 - Safety measures not respected by per 3
HE 001	HE 007 - Load is not properly prepared (sling l 3
HE 001	HE 008 - Unexpected technical problem relate 3
HE 001	HE 009 - Unexpected technical problem on air 3
HE 001	HE 010 - Lose objects moved by the rotor dow 3
HE 001	HE 011 - Not accurate or missing mission plan 2

Right Panel: Consequence

No.	Consequence
HE 001	HE 001 - Aircraft crash 2 E
HE 001	HE 001 - Property damage on ground 3 C
HE 001	HE 001 - Injury to flight crew or crew member 3 C
HE 001	HE 001 - Injury to passengers 2 C
HE 001	HE 001 - Aircraft not available 3 B
HE 001	HE 001 - Pilot/personnel not available 3 B
HE 001	HE 001 - Rules infringement 4 B
HE 001	HE 001 - Main rotor blades strike a ground ob 3 C
HE 001	HE 001 - Tail rotor blades strike a ground obst 3 C
HE 001	HE 001 - Impact with wires or cables 2 E

Bottom Left Panel: Proactive Barrier

No.	Proactive Barrier
CA 001	PB 005, Pilot recency
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

Bottom Center Panel: Task

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

Bottom Right Panel: Recovery Barrier

No.	Recovery Barrier
CO 001	RB 001, Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

CAUSES?...



- External pressure
- Meteorological briefing or information
- Flight planning
- Complex, unusual or marginal flight operations briefing
- Complex, unusual or marginal flight operations
- Meteorological conditions - Visibility
- Meteorological conditions - Cloud base
- Meteorological conditions - Wind
- Meteorological conditions - Phenomena
- IFR training
- Standard phraseology
- CRM training
- Multi-crew training

No.	Cause
HE 001	CA 001, External pressure

No.	Hazardous Event	Likel.
HE 001	Poor decision making	5

CAUSE

B - LINK EACH HAZ. EVENT WITH RELATED CAUSES

- 1 - Select the Haz. Event element
- 2 - Add, delete or edit related Cause

Causes related to Hazardous Event

Haz. Event	Related Causes
HE 001	CA 001, External pressure
HE 001	CA 002, Meteorological briefing or information
HE 001	CA 003, Flight planning
HE 001	CA 004, Complex, unusual or marginal flight operations briefing
HE 001	CA 005, Complex, unusual or marginal flight operations
HE 001	CA 006, Meteorological conditions - Visibility
HE 001	CA 007, Meteorological conditions - Cloud base
HE 001	CA 008, Meteorological conditions - Wind
HE 001	CA 009, Meteorological conditions - Phenomena
HE 001	CA 012, CRM training
HE 001	CA 014, EGPWS apparatus on-board

Hazardous Event

HE ID	Hazardous Event
HE 001	Poor decision making
HE 002	Lack of meteorological - Information
HE 003	Lack of a pre-take-off briefing between pilots
HE 004	Use of non-standard or not trained procedures
HE 005	Degraded Visual Conditions (DVE) - Take-off
HE 006	Inadvertent IMC - Take-off
HE 007	Lack of IMC instrument scan
HE 008	Non-standard or incorrect phraseology inside t
HE 009	Lack of Crew Resource Management (CRM)
HE 010	Lack of multi-crew training
HE 011	EGPWS advising too late
HE 012	Loss of Control in flight

Record di dati 1 da 11

Cause n. CA 001

Cause Name External pressure

Description External pressures – real or perceived – on pilots of aircraft operated in the corporate environment.

Date Inserted 16/09/16 Revision

References

Cause List

Cause	Cause Name
CA 001	External pressure
CA 002	Meteorological briefing or information
CA 003	Flight planning
CA 004	Complex, unusual or marginal flight operations briefing
CA 005	Complex, unusual or marginal flight operations
CA 006	Meteorological conditions - Visibility
CA 007	Meteorological conditions - Cloud base
CA 008	Meteorological conditions - Wind
CA 009	Meteorological conditions - Phenomena
CA 010	IFR training
CA 011	Standard phraseology
CA 012	CRM training
CA 013	Multi-crew training

Record di dati 1 da 14



A - ADD, DELETE OR EDIT CAUSE LIST

No.	Hazardous Event	Likel.
HE 001 -	Poor decision making	5

B - LINK EACH HAZ. EVENT WITH RELATED CAUSES

- 1 - Select the Haz. Event element**
2 - Add, delete or edit related Cause

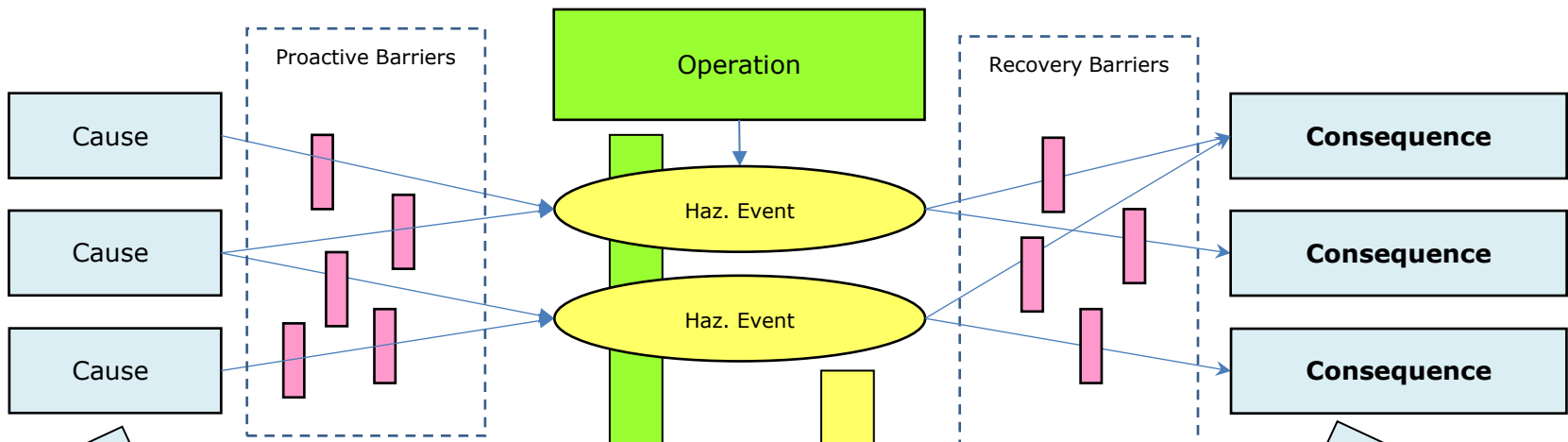
Hazardous Event

	HE ID	Hazardous Event
▶	HE 001	Poor decision making
	HE 002	Lack of meteorological - Information
	HE 003	Lack of a pre-take-off briefing between pilots
	HE 004	Use of non-standard or not trained procedures
	HE 005	Degraded Visual Conditions (DVE) - Take-off
	HE 006	Inadvertent IMC - Take-off
	HE 007	Lack of IMC instrument scan
	HE 008	Non-standard or incorrect phraseology inside t
	HE 009	Lack of Crew Resource Management (CRM)
	HE 010	Lack of multi-crew training
	HE 011	EGPWS advising too late
	HE 012	Loss of Control in flight
⚙		

- CA 001, External pressure
- CA 002, Meteorological briefing or information
- CA 003, Flight planning
- CA 004, Complex, unusual or marginal flight operations briefing
- CA 005, Complex, unusual or marginal flight operations
- CA 006, Meteorological conditions - Visibility
- CA 007, Meteorological conditions - Cloud base
- CA 008, Meteorological conditions - Wind
- CA 009, Meteorological conditions - Phenomena
- CA 010, IFR training
- CA 011, Standard phraseology
- CA 012, CRM training
- CA 013, Multi-crew training
- CA 014, EGPWS apparatus on-board

Cause Name
operations briefing
operations
e
na

**A - ADD,
DELETE
OR EDIT
CAUSE
LIST**



2.1 - EHEST MARIA v. 1 - 2015-10-01 - Sling Load...

Edit View Insert Format Table Tools Win

MainBowTie - OpenOffice Base Form

MARIA (My Assessment Risks for Accidents)

THE CASE STUDY
THE TOP EVENT
THE HAZARD OR THE CONSEQUENCE
THE TASK

Light & Courtesy
BURIGANA
BARDIA
e-mail @

Report
Op-Prod
Report
Op-Rec

RADEC
Cause
Proactive Barrier
Hazardous Event
Recovery Barrier
Consequence

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area

Take offs

No.	Operation
OP 01	Sling load operations

New/Edit

No.	Hazardous Event
OP 01	HE 001 - Reduced separation with obstacles
OP 01	HE 002 - Reduced separation of the load from 3
OP 01	HE 003 - Degraded aircraft performance 1
OP 01	HE 004 - Degraded aircraft performance during 1
OP 01	HE 005 - Aircraft unintentionally deviates from 2
OP 01	HE 006 - Safety measures not respected by per 3
OP 01	HE 007 - Load is not properly prepared (sling l 3
OP 01	HE 008 - Unexpected technical problem relate 3
OP 01	HE 009 - Unexpected technical problem on air 3
OP 01	HE 010 - Lose objects moved by the rotor dow 3
OP 01	HE 011 - Not accurate or missing mission plan 2

New/Edit

No.	Consequence
HE 001	Aircraft crash 2 E
HE 001	Property damage on ground 3 C
HE 001	Injury to flight crew or crew member 3 C
HE 001	Injury to passengers 2 C
HE 001	Aircraft not available 3 B
HE 001	Pilot/personnel not available 3 B
HE 001	Rules infringement 4 B
HE 001	Main rotor blades strike a ground ob 3 C
HE 001	Tail rotor blades strike a ground obst 3 C
HE 001	Impact with wires or cables 2 E

CO - HEs CO - RBs List

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

New/Edit PB - CAs List

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

New/Edit

No.	Recovery Barrier
CO 001	RB 001, Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

New/Edit RB - COs List

Record 1 of 2



BARRIERS?...

- Mission acceptability policy and procedure
- CRM training
- Decision making training
- Internet mission planning and meteorological information services subscription
- Available list of internet meteorological sites
- Off-line planning software and hardware
- Operations Manual
- Standard Operating Procedures
- Ground and flight recurrent training
- Simulator recurrent training
- IFR training
- Standard phraseology training
- Multi-crew training

No.	Cause
▶ E 001	CA 001, External pressure
HE 001	CA 002, Meteorological briefing or information
001	CA 003, Flight planning
001	CA 004, Complex, unusual or marginal flight operation
01	CA 005, Complex, unusual or marginal flight operation
1	CA 006, Meteorological conditions - Visibility
	CA 007, Meteorological conditions - Cloud base
	CA 008, Meteorological conditions - Wind
	CA 009, Meteorological conditions - Phenomena
	CA 012, CRM training
	CA 014, EGPWS apparatus on-board

New CA - PBs CA - HEs List

No.	Hazardous Event	Likel.
▶ OP 001	HE 001 - Poor decision making	5
OP 001	HE 002 - Lack of meteorological - Information	3
OP 001	HE 003 - Lack of a pre-take-off briefing between	4
OP 001	HE 004 - Use of non-standard or not trained pilot	4
OP 001	HE 005 - Degraded Visual Conditions (DVE) - Terrain	3
OP 001	HE 006 - Inadvertent IMC - Take-off	2
OP 001	HE 007 - Lack of IMC instrument scan	4
OP 001	HE 008 - Non-standard or incorrect phraseology	5
OP 001	HE 009 - Lack of Crew Resource Management	5
OP 001	HE 010 - Lack of multi-crew training	5
OP 001	HE 011 - EGPWS advising too late	3

New/Edit HE - CAs HE - COs List

No.	Proactive Barrier
▶ CA 001	PB 001, Mission acceptability policy and procedure
CA 001	PB 003, Decision making training
☀	

New/Edit PB - CAs List

No.	Cause
E 001	CA 001, External pressure

No.	Hazardous Event	Likel.
HE 001	Poor decision making	5

PROACTIVE BARRIER

B - LINK EACH CAUSE WITH RELATED P. BARRIER

- 1 - Select the Cause element
- 2 - Add, delete or edit related P. Barrier

A - ADD, DELETE OR EDIT PROACTIVE BARRIER LIST

Cause

Cause	Cause Name
CA 001	External pressure
CA 002	Meteorological briefing or information
CA 003	Flight planning
CA 004	Complex, unusual or marginal flight operations briefing
CA 005	Complex, unusual or marginal flight operations
CA 006	Meteorological conditions - Visibility
CA 007	Meteorological conditions - Cloud base
CA 008	Meteorological conditions - Wind

Related Proactive Barrier

Cause	Related Proactive Barrier
CA 001	PB 001, Mission acceptability policy and procedure
CA 001	PB 003, Decision making training

P. Barrier n.

P. Barrier Name

Description

Date Inserted Revision

Person In Charge

In Place? ☒ No ☐ Yes

References

Proactive Barrier List

P. Barrier	Proactive Barrier Name	Date Inserted	Date Revision	Person In Charge	In Place
PB 000	No Barriers				<input type="checkbox"/>
PB 001	Mission acceptability policy and procedure	16/09/16		FOPH	<input type="checkbox"/>
PB 002	CRM training	16/09/16		Training PH	<input type="checkbox"/>
PB 003	Decision making training	16/09/16		Training PH	<input type="checkbox"/>
PB 004	Internet mission planning and meteorological information services subscription	16/09/16		Ground PH	<input type="checkbox"/>
PB 005	Available list of internet meteorological sites	16/09/16		Ground PH	<input type="checkbox"/>
PB 006	Off-line planning software and hardware	16/09/16		Ground PH	<input type="checkbox"/>
PB 007	Operations Manual	16/09/16		FOPH	<input type="checkbox"/>

No.	Cause
E 001	CA 001, External pressure

No.	Hazardous Event	Likel.
P 001	HE 001 - Poor decision making	5

PROACTIVE BARRIER

B - LINK EACH CAUSE WITH RELATED P. BARRIER
 1 - Select the Cause element
 2 - Add, delete or edit related P. Barrier

A - ADD, DELETE OR EDIT PROACTIVE BARRIER LIST

Cause

Cause	Cause Name
CA 001	External pressure
CA 002	Meteorological briefing or information
CA 003	Flight planning
CA 004	Complex, unusual or marginal flight operations briefing
CA 005	Complex, unusual or marginal flight operations
CA 006	Meteorological conditions - Visibility
CA 007	Meteorological conditions - Cloud base
CA 008	Meteorological conditions - Wind

Related Proactive Barrier

Cause	Related Proactive Barrier
CA 001	PB 001, Mission acceptability policy and procedure
CA 001	PB 003, Decision making training
	PB 000, No Barriers
	PB 001, Mission acceptability policy and procedure
	PB 002, CRM training
	PB 003, Decision making training
	PB 004, Internet mission planning and meteorological information services subscription
	PB 005, Available list of internet meteorological sites
	PB 006, Off-line planning software and hardware
	PB 007, Operations Manual
	PB 008, Standard Operating Procedures
	PB 009, Ground and flight recurrent training
	PB 010, Simulator recurrent training

Proactive Barrier

P. Barrier	
PB 000	PB 011, IFR training
PB 001	PB 012, Standard phraseology training
PB 002	PB 013, Multi-crew training
PB 003	Decision making training
PB 004	Internet mission planning and meteorological information services subscription
PB 005	Available list of internet meteorological sites
PB 006	Off-line planning software and hardware
PB 007	Operations Manual

Inserted	Date Revision	Person In Charge	In Place
			<input type="checkbox"/>
16/09/16		FOPH	<input type="checkbox"/>
16/09/16		Training PH	<input type="checkbox"/>
16/09/16		Training PH	<input type="checkbox"/>
16/09/16		Ground PH	<input type="checkbox"/>
16/09/16		Ground PH	<input type="checkbox"/>
16/09/16		Ground PH	<input type="checkbox"/>
16/09/16		FOPH	<input type="checkbox"/>

P. Barrier n.

P. Barrier Name

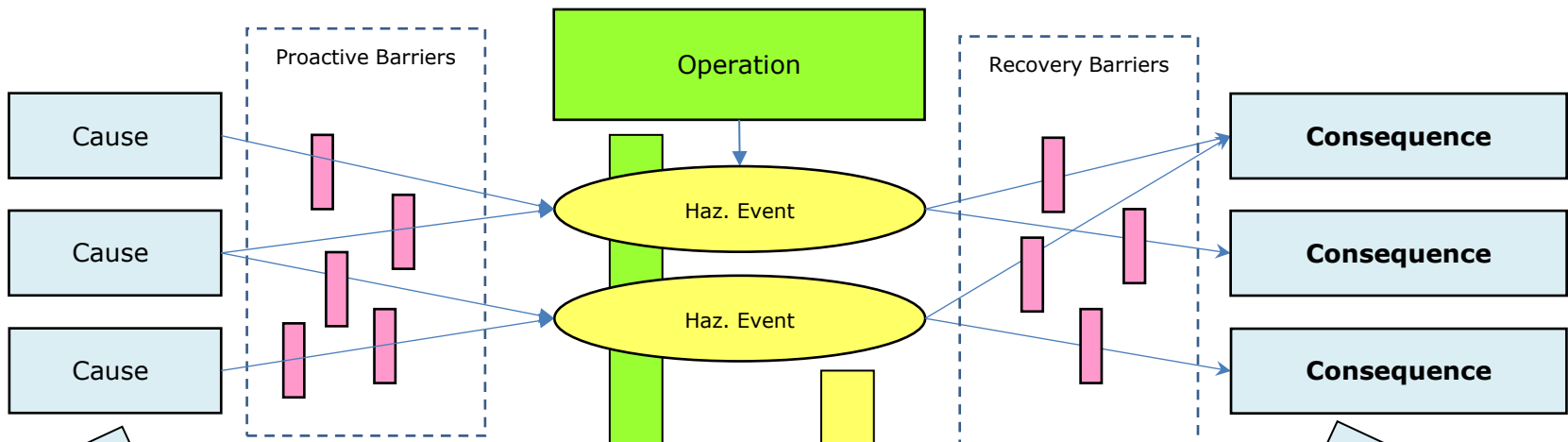
Description

Date Inserted Revision

Person In Charge

In Place? ☒ No ☐ Yes

References



2.1 - EHEST MARIA v.1 - 2015-10-01 - Sling Load.oo MainBowTie - OpenOffice Base Form

MARIA (My Assessment Risks for Incidents & Accidents)

THE CASE STUDY
THE TOP EVENT
THE HAZARD OR THE CONSEQUENCE
THE BARRIERS TASK

CAUSE

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area

Operation

No.	Operation
OP 01	Sling load operations

HAZARDOUS EVENT

No.	Hazardous Event
OP 01	HE 001 - Reduced separation with obstacles
OP 01	HE 002 - Reduced separation of the load from 3
OP 01	HE 003 - Degraded aircraft performance
OP 01	HE 004 - Degraded aircraft performance during
OP 01	HE 005 - Aircraft unintentionally deviates from
OP 01	HE 006 - Safety measures not respected by per
OP 01	HE 007 - Load is not properly prepared (sling l
OP 01	HE 008 - Unexpected technical problem relate
OP 01	HE 009 - Unexpected technical problem on air 3
OP 01	HE 010 - Lose objects moved by the rotor dow
OP 01	HE 011 - Not accurate or missing mission plan 2

CONSEQUENCE

No.	Consequence
HE 001	HE 001 Aircraft crash
HE 001	HE 001 Property damage on ground
HE 001	HE 001 Injury to flight crew or crew member
HE 001	HE 001 Injury to passengers
HE 001	HE 001 Aircraft not available
HE 001	HE 001 Pilot/personnel not available
HE 001	HE 001 Rules infringement
HE 001	HE 001 Main rotor blades strike a ground ob
HE 001	HE 001 Tail rotor blades strike a ground obst
HE 001	HE 001 Impact with wires or cables

Proactive Barriers

No.	Proactive Barriers
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

Recovery Barriers

No.	Recovery Barriers
CO 001	RB 001, Sling load operation plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

Task List

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

Record 1 of 1

Consequence List

	Consequence	Consequence Name	Risk
▶	CO 001	CFIT	3 E
	CO 002	Helicopter damage	2 C
	CO 003	Injury to passengers	2 D
	CO 004	Injury to crew	2 D
	CO 005	Damage to properties on ground	3 B
	CO 006	Injury to persons on ground	3 B
	CO 007	Flight or mission not completed as planned	4 B
	CO 008	Helicopter not available	3 B
	CO 009	Crew not available	3 B
	CO 010	Flight cancelled	3 B
☀			

CO 002 RB 003, CRM training

CO 002 RB 004, Multi-crew training

RB 000, No Barriers

RB 001, EGPWS

RB 002, Multi-crew

RB 003, CRM training

RB 004, Multi-crew training

RB 005, Insurance

RB 006, Personnel personal and next of kin data

RB 007, Emergency Response Plan (ERP)

RB 008, Company notification plan

RB 009, Dispatch or Operations Centre

ations Centre

RB - COs

List

ORO.GEN.200 Management system

a) The operator shall establish, implement and maintain a management system that includes:

- 1) (...)
- 2) (...)
- 3) the identification of aviation safety hazards entailed by the activities of the operator, their evaluation and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;

21 - EHEST MARIA v.1 - 2015-10-01 - Sling Load.odb : frm_05_...MainBowTie - OpenOffice Base: Database Form

File Edit View Insert Format Table Tools Window Help

MARIA (My Assessment of Risks for Incidents and Accidents)

EHEST RISK ASSESSMENT TOOL
A- SELECT THE CASE STUDY
B- SELECT THE TOP EVENT
C- SELECT THE HAZARD OR THE CONSEQUENCE
D- SELECT THE BARRIERS
E- SELECT THE TASK

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ELIMIMARDA
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No. Operation
OP 01 Sling load operations

No. Cause
HE 001 CA 001, Trees, bushes, vegetation
HE 001 CA 002, Wires, power lines
HE 001 CA 003, Low Clouds
HE 001 CA 004, Low visibility, fog
HE 001 CA 009, Confined area operations, landings, take offs
HE 001 CA 010, Use of sling load
HE 001 CA 017, Operation planning
HE 001 CA 019, Mountainous area

No. Hazardous Event Likel.
OP 01 HE 001 - Reduced separation with obstacles 2
OP 01 HE 002 - Reduced separation of the load from 3
OP 01 HE 003 - Degraded aircraft performance 1
OP 01 HE 004 - Degraded aircraft performance during 1
OP 01 HE 005 - Aircraft unintentionally deviates from 2
OP 01 HE 006 - Safety measures not respected by pm 3
OP 01 HE 007 - Load is not properly prepared (sling k, 3
OP 01 HE 008 - Unexpected technical problem relate 3
OP 01 HE 009 - Unexpected technical problem on air 3
OP 01 HE 010 - Lose objects moved by the rotor down 3
OP 01 HE 011 - Not accurate or missing mission plan 2

No. Consequence Risk
HE 001 CO 001 - Aircraft crash 2 E
HE 001 CO 002 - Property damage on ground 3 C
HE 001 CO 004 - Injury to flight crew or crew member 3 C
HE 001 CO 005 - Injury to passengers 2 C
HE 001 CO 006 - Aircraft not available 3 B
HE 001 CO 007 - Pilot/personnel not available 3 B
HE 001 CO 009 - Rules infringement 4 B
HE 001 CO 011 - Main rotor blades strike a ground ob 3 C
HE 001 CO 012 - Tail rotor blades strike a ground ob 3 C
HE 001 CO 013 - Impact with wires or cables 2 E

No. Proactive Barrier
CA 001 PB 003, Pilot experience
CA 001 PB 004, Pilot recency
CA 001 PB 008, Radio contact with personnel on ground
CA 001 PB 009, Initial Recce of the operating area
CA 001 PB 010, Previous ground reconnaissance
CA 001 PB 011, Pilot minimum mountain experience
CA 001 PB 014, Personnel on ground experience
CA 001 PB 015, Personnel on ground recency
CA 001 PB 016, Mission planning
CA 001 PB 019, Pre-flight Risk Assessment
CA 001 PB 020, In-flight decision making training

Ref. Task no. Task Name Due D...
PB 001 T 001 Develop SOP Sling Load Operation 31/05/15
PB 025 T 001 Develop EGPWS 31/05/15

No. Recovery Barrier
CO 001 RB 001, Emergency Response Plan (ERP)
CO 001 RB 002, Pilot and personnel data
CO 001 RB 005, Spare helicopter availability
CO 001 RB 006, Personnel proper clothing
CO 001 RB 007, Survival kit
CO 001 RB 008, Portable aerosautical radio on board
CO 001 RB 009, Emergency Locator Beacon (ELT)
CO 001 RB 010, Insurance
CO 001 RB 011, First Aid Kit
CO 001 RB 012, Wire strike protection system

Record 1 of 1

Page 1 / 1 Default STD 100 %

MAKE IT EASY

ORO.GEN.200 Management system

a) The operator shall establish, implement and maintain a management system that includes:

- 1) (...)
- 2) (...)
- 3) the identification of aviation **safety hazards** entailed by the activities of the operator, their evaluation and the management of associated risks, including taking action to mitigate the risk and verify their effectiveness;

MARIA (My Assessment of Risks for Incidents and Accidents)

EHEST RISK ASSESSMENT TOOL

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ELILIMBARDIA

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No. Operation

OP 01 Sling load operations

No. Cause

HE 001 CA 001, Trees, bushes, vegetation

HE 001 CA 002, Wires, power lines

HE 001 CA 003, Low Clouds

HE 001 CA 004, Low visibility, fog

HE 001 CA 009, Confined area operations, landings, take offs

HE 001 CA 010, Use of sling load

HE 001 CA 017, Operation planning

HE 001 CA 019, Mountainous area

No. Hazardous Event Likelihood

HE 001 - Reduced separation with obstacles 2

HE 002 - Reduced separation of the load 3

HE 003 - Degraded aircraft performance 3

HE 004 - Degraded aircraft performance due to 3

HE 005 - Aircraft unintentionally deviates from 3

HE 006 - Safety measures not respected by 3

HE 007 - Load is not properly prepared (slings) 3

HE 008 - Unexpected technical problem related 3

HE 009 - Unexpected technical problem related 3

HE 010 - Loss of objects moved by the rotor 3

HE 011 - Not accurate or missing information 2

No. Consequence Risk

HE 001 CO 001 - Aircraft crash 2 E

HE 001 CO 002 - Property damage on ground 3 C

HE 001 CO 004 - Injury to flight crew or crew member 3 C

HE 001 CO 005 - Injury to passengers 2 C

HE 001 CO 006 - Aircraft not available 3 B

HE 001 CO 007 - Pilot personnel not available 3 B

HE 001 CO 009 - Rules infringement 4 B

HE 001 CO 011 - Main rotor blades strike a ground ob 3 C

HE 001 CO 012 - Tail rotor blades strike a ground ob 3 C

HE 001 CO 013 - Impact with wires or cables 2 E

No. Proactive Barrier

PB 001 PB 003, Pilot experience

PB 001 PB 004, Pilot recency

PB 001 PB 008, Radio contact with personnel on ground

PB 001 PB 009, Initial Recce of the operating area

PB 001 PB 010, Previous ground reconnaissance

PB 001 PB 011, Pilot minimum mountain experience

PB 001 PB 014, Personnel on ground recency

PB 001 PB 015, Personnel on ground recency

PB 001 PB 016, Mission planning

PB 001 PB 019, Pre-flight Risk Assessment

PB 001 PB 020, In-flight decision making training

Ref. Task no. Task Name Due Date

PB 001 T 001 Develop SOP Sling Load Operation 31/05/15

PB 001 T 002 Develop EGPWS 31/05/15

No. Recovery Barrier

RB 001 RB 001, Emergency Response Plan (ERP)

RB 001 RB 002, Pilot and personnel data

RB 001 RB 005, Spare helicopter availability

RB 001 RB 006, Personnel proper clothing

RB 001 RB 007, Survival kit

RB 001 RB 008, Portable aeronautical radio on board

RB 001 RB 009, Emergency Locator Beacon (ELT)

RB 001 RB 010, Insurance

RB 001 RB 011, First Aid Kit

RB 001 RB 012, Wire strike protection system

MAKE IT EASY

ORO.GEN.200 Management system

- a) The operator shall establish, implement and maintain a management system that includes:
- 1) (...)
 - 2) (...)
 - 3) the identification of aviation safety hazards entailed by the activities of the operator, **their evaluation** and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;

MARIA (My Assessment of Risks for Incidents and Accidents)

EHST RISK ASSESSMENT TOOL

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Operation

No.	Operation	Hazardous Event	Likelihood	Consequence	Risk
OP 01	Sling load operations	HE 001 - Reduced separation with other aircraft	2	HE 001 - Aircraft crash	2 E
		HE 002 - Reduced separation of aircraft	3	HE 001 - CO 002 - Property damage on ground	3 C
		HE 003 - Degraded aircraft performance	1	HE 001 - CO 004 - Injury to flight crew or crew member	3 C
		HE 004 - Degraded aircraft performance during	1	HE 001 - CO 005 - Injury to passengers	2 C
		HE 005 - Aircraft unintentionally initiates	1	HE 001 - CO 006 - Aircraft not available	3 B
		HE 006 - Safety measures not initiated by ground	1	HE 001 - CO 007 - Pilot personnel not available	3 B
		HE 007 - Load is not properly secured (sliding)	1	HE 001 - CO 009 - Rules infringement	4 B
		HE 008 - Unexpected technical problem related	1	HE 001 - CO 011 - Main rotor blades strike ground ob	3 C
		HE 009 - Unexpected technical problem (loss of	1	HE 001 - CO 012 - Tail rotor blades strike ground ob	3 C
		HE 010 - Lose objects moved by the aircraft	1	HE 001 - CO 013 - Impact with wires or cables	2 E
		HE 011 - Not accurate or missing information	2		

Proactive Barrier

No.	Task no.	Task Name	Due Date
CA 001	PB 003	Pilot experience	
CA 001	PB 004	Pilot recency	
CA 001	PB 008	Radio contact with personnel on ground	
CA 001	PB 009	Initial Recce of the operating area	
CA 001	PB 010	Previous ground reconnaissance	
CA 001	PB 011	Pilot minimum mountain experience	
CA 001	PB 014	Personnel on ground recency	
CA 001	PB 015	Personnel on ground recency	
CA 001	PB 016	Mission planning	
CA 001	PB 019	Pre-flight Risk Assessment	
CA 001	PB 020	In-flight decision making training	

Recovery Barrier

No.	Task no.	Task Name	Due Date
CO 001	RB 001	Emergency Response Plan (ERP)	
CO 001	RB 002	Pilot and personnel data	
CO 001	RB 005	Spare helicopter availability	
CO 001	RB 006	Personnel proper clothing	
CO 001	RB 007	Survival kit	
CO 001	RB 008	Portable aeronautical radio on board	
CO 001	RB 009	Emergency Locator Beacon (ELT)	
CO 001	RB 010	Insurance	
CO 001	RB 011	First Aid Kit	
CO 001	RB 012	Wire strike protection system	

MAKE IT EASY

ORO.GEN.200 Management system

- a) The operator shall establish, implement and maintain a management system that includes:
- 1) (...)
 - 2) (...)
 - 3) the identification of aviation safety hazards entailed by the activities of the operator, their evaluation and the **management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;**

The screenshot shows the MARIA (My Assessment of Risks for Incidents) software interface. The interface is divided into several panels. On the left, there's a 'Cause' panel with a list of potential causes like 'CA 001, Trees, bushes, vegetation'. In the center, there's a 'Hazardous Event' panel with a list of events like 'HE 001 - Reduced separation with obstacle'. On the right, there's a 'Consequence' panel with a list of consequences like 'CO 001 - Crash'. At the bottom, there are panels for 'Proactive Barrier' and 'Recovery Barrier'. A large red arrow points from the text 'management of associated risks' in the list above to the 'Hazardous Event' panel. Red circles highlight the 'Cause', 'Hazardous Event', and 'Recovery Barrier' panels.

MAKE IT EASY



OUTPUT

2.1 - EHEST MARIA v. 1 - 2015-10-01 - Sling Load.odb : frm_05_-_MainBowTie - OpenOffice Base: Database Form

File Edit View Insert Format Table Tools Window Help

MARIA (My Assessment of Risks for Incidents and Accidents)

EHEST RISK ASSESSMENT TOOL

A - SELECT THE CASE STUDY
B - SELECT THE TOP EVENT
C - SELECT THE HAZARD OR THE CONSEQUENCE
D - SELECT THE BARRIERS
E - SELECT THE TASK

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REPORTS

Report
Op-Proact. Barr.
Report
Op-Rec. Barr.

RADEC

Cause
Proactive Barrier
Hazardous Event
Recovery Barrier
Consequence

No.	Operation
OP 01	Sling load operations

New/Edit List

No.	Cause
HE 001	CA 001, Trees, bushes, vegetation
HE 001	CA 002, Wires, power lines
HE 001	CA 003, Low Clouds
HE 001	CA 004, Low visibility, fog
HE 001	CA 009, Confined area operations, landings, take offs
HE 001	CA 010, Use of sling load
HE 001	CA 017, Operation planning
HE 001	CA 019, Mountainous area

New/Edit CA - PBs CA - HEs List

No.	Hazardous Event	Likel.
OP 01	HE 001 - Reduced separation with obstacles	2
OP 01	HE 002 - Reduced separation of the load from	3
OP 01	HE 003 - Degraded aircraft performance	1
OP 01	HE 004 - Degraded aircraft performance during	1
OP 01	HE 005 - Aircraft unintentionally deviates from	2
OP 01	HE 006 - Safety measures not respected by per	3
OP 01	HE 007 - Load is not properly prepared (sling l	3
OP 01	HE 008 - Unexpected technical problem relat	3
OP 01	HE 009 - Unexpected technical problem on air	3
OP 01	HE 010 - Lose objects moved by the rotor dow	3
OP 01	HE 011 - Not accurate or missing mission plan	2

New/Edit HE - CAs HE - COs List

No.	Consequence	Risk
HE 001	CO 001 - Aircraft crash	2 E
HE 001	CO 002 - Property damage on ground	3 C
HE 001	CO 004 - Injury to flight crew or crew member	3 C
HE 001	CO 005 - Injury to passengers	2 C
HE 001	CO 006 - Aircraft not available	3 B
HE 001	CO 007 - Pilot/personnel not available	3 B
HE 001	CO 009 - Rules infringement	4 B
HE 001	CO 011 - Main rotor blades strike a ground ob	3 C
HE 001	CO 012 - Tail rotor blades strike a ground obst	3 C
HE 001	CO 013 - Impact with wires or cables	2 E

New/Edit CO - HEs CO - RBs List

No.	Proactive Barrier
CA 001	PB 003, Pilot experience
CA 001	PB 004, Pilot recency
CA 001	PB 008, Radio contact with personnel on ground
CA 001	PB 009, Initial Recce of the operating area
CA 001	PB 010, Previous ground reconnaissance
CA 001	PB 011, Pilot minimum mountain experience
CA 001	PB 014, Personnel on ground experience
CA 001	PB 015, Personnel on ground recency
CA 001	PB 016, Mission planning
CA 001	PB 019, Pre-flight Risk Assessment
CA 001	PB 020, In-flight decision making training

New/Edit PB - CAs List

Ref.	Task no.	Task Name	Due D...
PB 001	T 001	Develop SOP Sling Load Operation	31/05/15
PB 025	T 002	Develop EGPWS	31/05/15

Record 1 of 2 New/Edit List

No.	Recovery Barrier
CO 001	RB 001, Emergency Response Plan (ERP)
CO 001	RB 002, Pilot and personnel data
CO 001	RB 005, Spare helicopter availability
CO 001	RB 006, Personnel proper clothing
CO 001	RB 007, Survival kit
CO 001	RB 008, Portable aeronautical radio on board
CO 001	RB 009, Emergency Locator Beacon (ELT)
CO 001	RB 010, Insurance
CO 001	RB 011, First Aid Kit
CO 001	RB 018, Wire strike protection system

New/Edit RB - COs List

Record 1 of 1

Page 1 / 1 Default STD 100 %

	A	B	C	D	E	F	G	H
1	OPERATION	HAZ. EVENT	CAUSE ID	ACTIVE BARP	DEFINITION	LIKELIHOOD		
2	OP 001		Accident AW139, G-LBAL - Gillingham Hall					
3		HE 001			Poor decision	5		
4			CA 001		External pressure			
5				PB 001	Mission acceptability policy			
6				PB 003	Decision making training			
7			CA 002		Technical briefing or			
8				PB 001	Internet mission planning			
9				PB 004	Off-line planning software			
10				PB 005	Flight planning			
11				PB 006	Mission acceptability policy			
12			CA 003		Internet mission planning			
13				PB 001	Off-line planning software			
14				PB 004	Operations Manual			
15				PB 006	Standard Operating Procedure			
16				PB 007	Complex, unusual or marginal conditions			
17			CA 004		CRM training			
18				PB 002	Ground and flight recurrent training			
19				PB 009	Simulator recurrent training			
20				PB 010	IFR training			
21				PB 011	Multi-crew training			
22				PB 013	Complex, unusual or marginal conditions			
23			CA 005		Mission acceptability policy			
24				PB 001	CRM training			
25				PB 002	Decision making training			
26				PB 003	Operations Manual			
27				PB 007	Standard Operating Procedure			
28				PB 008	Ground and flight recurrent training			
29				PB 009	Simulator recurrent training			
30				PB 010	IFR training			
31				PB 011	Multi-crew training			
32				PB 013	Meteorological conditions			
33			CA 006		Mission acceptability policy			
34				PB 001	CRM training			
35				PB 002	Decision making training			
36				PB 003	Operations Manual			
37				PB 004	Standard Operating Procedure			
38				PB 005	Ground and flight recurrent training			
39				PB 006	Simulator recurrent training			
40				PB 007	IFR training			
41				PB 008	Multi-crew training			
42				PB 009	Complex, unusual or marginal conditions			
43				PB 010	Mission acceptability policy			
44				PB 011	CRM training			
45				PB 012	Decision making training			
46				PB 013	Operations Manual			
47				PB 014	Standard Operating Procedure			
48				PB 015	Ground and flight recurrent training			
49				PB 016	Simulator recurrent training			
50				PB 017	IFR training			
51				PB 018	Multi-crew training			
52				PB 019	Meteorological conditions			
53				PB 020	Mission acceptability policy			
54				PB 021	CRM training			
55				PB 022	Decision making training			
56				PB 023	Operations Manual			
57				PB 024	Standard Operating Procedure			
58				PB 025	Ground and flight recurrent training			
59				PB 026	Simulator recurrent training			
60				PB 027	IFR training			
61				PB 028	Multi-crew training			
62				PB 029	Complex, unusual or marginal conditions			
63				PB 030	Mission acceptability policy			
64				PB 031	CRM training			
65				PB 032	Decision making training			
66				PB 033	Operations Manual			
67				PB 034	Standard Operating Procedure			
68				PB 035	Ground and flight recurrent training			
69				PB 036	Simulator recurrent training			
70				PB 037	IFR training			
71				PB 038	Multi-crew training			
72				PB 039	Meteorological conditions			
73				PB 040	Mission acceptability policy			
74				PB 041	CRM training			
75				PB 042	Decision making training			
76				PB 043	Operations Manual			
77				PB 044	Standard Operating Procedure			
78				PB 045	Ground and flight recurrent training			
79				PB 046	Simulator recurrent training			
80				PB 047	IFR training			
81				PB 048	Multi-crew training			
82				PB 049	Complex, unusual or marginal conditions			
83				PB 050	Mission acceptability policy			
84				PB 051	CRM training			
85				PB 052	Decision making training			
86				PB 053	Operations Manual			
87				PB 054	Standard Operating Procedure			
88				PB 055	Ground and flight recurrent training			
89				PB 056	Simulator recurrent training			
90				PB 057	IFR training			
91				PB 058	Multi-crew training			
92				PB 059	Meteorological conditions			
93				PB 060	Mission acceptability policy			
94				PB 061	CRM training			
95				PB 062	Decision making training			
96				PB 063	Operations Manual			
97				PB 064	Standard Operating Procedure			
98				PB 065	Ground and flight recurrent training			
99				PB 066	Simulator recurrent training			
100				PB 067	IFR training			

EHEST SAFETY MANAGEMENT TOOLKIT

HAZARDOUS EVENT IDENTIFICATION & RISK ASSESSMENT

HIRA - TEMPLATE – TABULAR

1st Edition, December 2015



	A	B	C	D	E	F
1						
2	Operation	OP 001	Accident AW139, G-LB			
3		Hazardous	Hazardous	Likelihood		
4		HE 001	Poor decisi	5		
5		HE 002	Lack of met	3		
6		HE 003	Lack of a pr	4		
7		HE 004	Use of non-	4		
8		HE 005	Degraded V	3		
9		HE 006	Inadvertent	2		
10		HE 007	Lack of IMO	4		
11		HE 008	Non-standa	5		
12		HE 009	Lack of Cre	5		
13		HE 010	Lack of mul	5		
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40						

RISK ASSESSMENT, DESCRIPTION, EVALUATION AND CONTROL (RADEC)	
RA No.: RA 001	Definition: Accident AW139, G-LBAL - Gillingham Hall, Norfolk
Ref.:	
Operation Des	Controls in place:
Hazards:	PB 001 Mission acceptability policy and procedure PB 002 CRM training PB 003 Decision making training PB 004 Internet mission planning and meteorological information services subscription PB 005 Available list of internet meteorological sites PB 006 Off-line planning software and hardware PB 007 Operations Manual PB 008 Standard Operating Procedures PB 009 Ground and flight recurrent training PB 010 Simulator recurrent training PB 011 IFR training PB 012 Standard phraseology training PB 013 Multi-crew training
Possible Haza	RB 001 EGPWS RB 002 Multi-crew RB 003 CRM training RB 004 Multi-crew training RB 005 Insurance RB 006 Personnel personal and next of kin data RB 007 Emergency Response Plan (ERP) RB 008 Company notification plan RB 009 Dispatch or Operations Centre
INITIAL Safety Risk (see Safety Risk Matrix)	
ACCEPTABLE	TOLERABLE
UNACCEPTABLE	
Additional Controls:	Implemented?
FINAL Safety Risk (see Safety Risk Matrix)	
ACCEPTABLE	TOLERABLE
UNACCEPTABLE	
Is the residual risk acceptable: YES NO (if NO go back to previous section)	
RISK ASSESSMENT CLOSED X	

A dramatic seascape with a bright light source, possibly the sun or moon, breaking through dark, heavy clouds over a dark ocean. The light creates a shimmering path on the water's surface. The overall mood is mysterious and contemplative.

What if I study a new Operation?...

MARIA (Management of Risks for Incidents and Accidents)

HIGHEST RISK ASSESSMENT

- A - SELECT THE CASE STUDY
- B - SELECT THE TOP LEVEL
- C - SELECT THE MAIN CAUSE
- D - SELECT THE MAIN EVENT
- E - SELECT THE MAIN CONSEQUENCE

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ELIOMBARDA
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No.	Operation
OP 001	Accident AW139, G-LBAL - Gillingham Hall, Norfolk
OP 002	Private transport
New/Edit	
List	

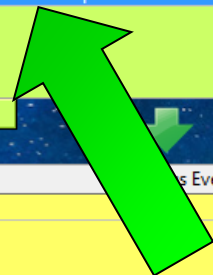
REPORTS

- Report Op-Proact. Barr.
- Report Op-Rec. Barr.

RADEC

- Cause
- Proactive Barrier
- Hazardous Event
- Recovery Barrier
- Consequence

NEW OPERATION



Cause
New/Edit
CA - PBs
CA - HEs
List

No.	Hazardous Event	Likel.
OP 002		
New/Edit		
HE - CAs		
HE - COs		
List		

No.	Consequence	Risk
New/Edit		
CO - HEs		
CO - RBs		
List		

No.	Proactive Barrier
New/Edit	
PB - CAs	
List	

Ref.	Task no.	Task Name	Due D...
New/Edit			
List			

No.	Recovery Barrier
New/Edit	
RB - COs	
List	

MARIA v. 2 - Helitech 2.odb : frm_05_-_MainBowTie - OpenOffice Base: Database Form

File Modifica Visualizza Inserisci Formato Tabella Strumenti Finestra

MARIA (Management of Risks for Incidents and Accidents)

HEHEST RISK ASSESSMENT
A - SELECT THE CASE STUDY
B - SELECT THE TOP
C - SELECT THE
D - SELECT THE
E - SELECT THE

REPORTS
Report
Op-Proact. Barr.
Report
Op-Rec. Barr.

RADEC
Cause
Proactive Barrier
Hazardous Event
Recovery Barrier
Consequence

No.	Operation
OP 001	Accident AW139, G-LBAL - Gillingham Hall, Norfolk
OP 002	Private transport

New/Edit List

No.	Hazardous Event	Likel.
OP 002		

Cause

No. Consequence Risk

Decision making
Lack of meteorological - Information
HE 003 - Lack of a pre-take-off briefing between pilots
HE 004 - Use of non-standard or not trained procedures - Take-off
HE 005 - Degraded Visual Conditions (DVE) - Take-off
HE 006 - Inadvertent IMC - Take-off
HE 007 - Lack of instrument scan
HE 008 - Non-standard incorrect phraseology inside the cabin
HE 009 - Lack of Resource Management (CRM)
HE 010 - Lack of maintenance training
HE 011 - EGPWS advisory state
HE 012 - Loss of Control

No.	Proactive Barrier
-----	-------------------

New/Edit PB - CAs List

Ref.	Task no.	Task Name	Due D...
------	----------	-----------	----------

Record di dati da New/Edit List

No.	Recovery Barrier
-----	------------------

New/Edit RB - COs List

RECYCLE HAZARDOUS EVENT

AUTOMATICALLY LINKS ELEMENTS

MARIA (Management of Risks for Incidents and Accidents)

HEHEST RISK ASSESSMENT

A - SELECT THE CASE STUDY
B - SELECT THE TOP
C - SELECT THE
D - SELECT THE
E - SELECT THE

Flight & Courtesy
Captain
Stefano BURIGANA
ELIOMBARDA
@ e-mail @

No.	Operation
OP 001	Accident AW139, G-LBAL - Gillingham Hall, Norfolk
OP 002	Private transport

New/Edit List

REPORTS

Report
Op-Proact. Barr.

Report
Op-Rec. Barr.

RADEC

Cause

Proactive Barrier

Hazardous Event

Recovery Barrier

Consequence

Cause
CA 001, External pressure
HE 006 CA 002, Meteorological briefing or information
HE 006 CA 003, Flight planning
HE 006 CA 004, Complex, unusual or marginal flight operation
HE 006 CA 005, Complex, unusual or marginal flight operation
HE 006 CA 006, Meteorological conditions - Visibility
HE 006 CA 007, Meteorological conditions - Cloud base
HE 006 CA 009, Meteorological conditions - Phenomena
HE 006 CA 010, IFR training
HE 006 CA 012, CRM training
HE 006 CA 013, Multi-crew training

New/Edit CA - PBs CA - HEs List

No.	Hazardous Event	Likel.
OP 002	HE 006 - Inadvertent IMC - Take-off	2

New/Edit HE - CAs HE - COs List

No.	Consequence	Risk
HE 006	CO 001 - CFIT	3 E
HE 006	CO 002 - Helicopter damage	2 C
HE 006	CO 003 - Injury to passengers	2 D
HE 006	CO 004 - Injury to crew	2 D
HE 006	CO 005 - Damage to properties on ground	3 B
HE 006	CO 006 - Injury to persons on ground	3 B

New/Edit CO - HEs CO - RBs List

No.	Proactive Barrier
CA 001	PB 001, Mission acceptability policy and procedure
CA 001	PB 003, Decision making training

New/Edit PB - CAs List

Ref.	Task no.	Task Name	Due D...
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Record di dati 1 da 1 New/Edit List

No.	Recovery Barrier
CO 001	RB 001, EGPWS
CO 001	RB 002, Multi-crew
CO 001	RB 003, CRM training
CO 001	RB 004, Multi-crew training
CO 001	RB 005, Insurance
CO 001	RB 006, Personnel personal and next of kin data
CO 001	RB 007, Emergency Response Plan (ERP)
CO 001	RB 008, Company notification plan

New/Edit RB - COs List



HELICOPTER MISSION REQUEST VADE MECUM



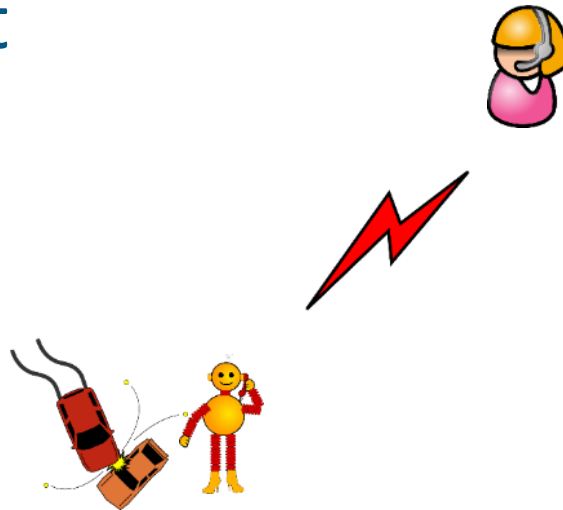


TYPICAL SCENARIO



TYPICAL SCENARIO

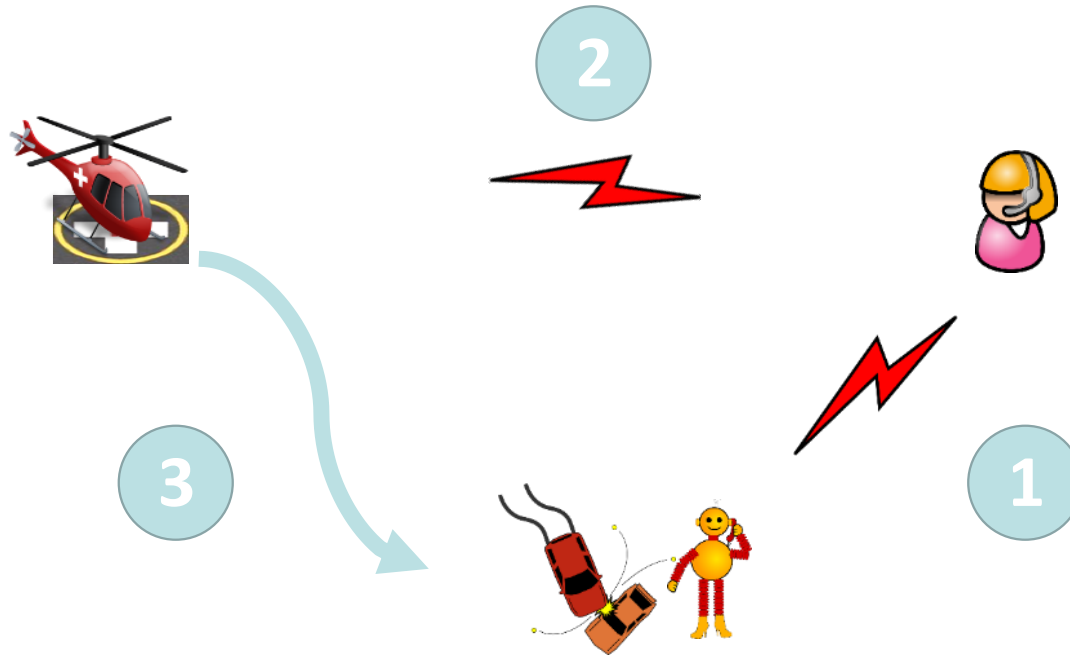
- Following an event, somebody will trigger the emergency dispatch centre
- Information exchanged at this stage is extremely important

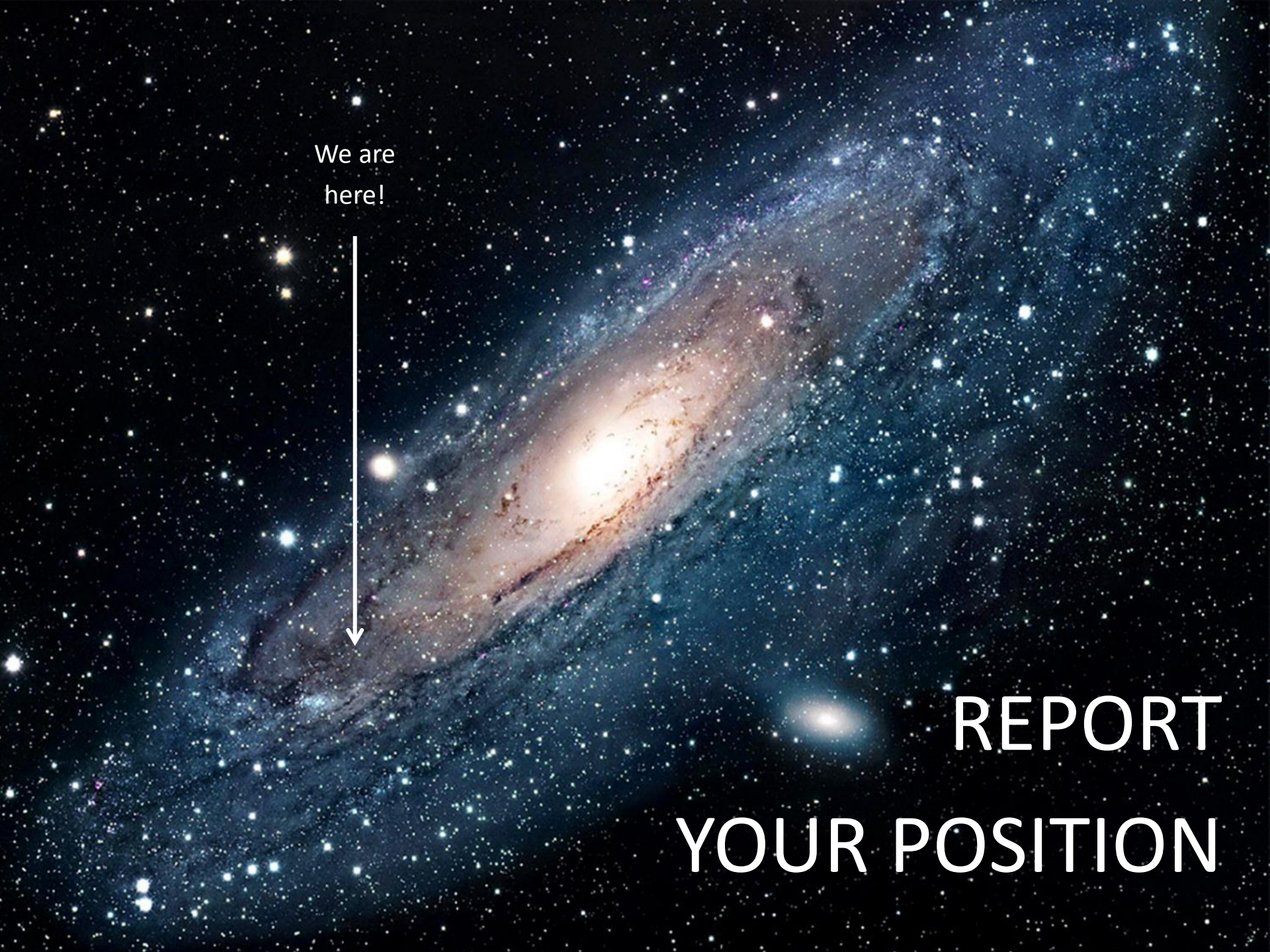




HELICOPTER INVOLVEMENT

- If deemed appropriate, the dispatch centre will request the helicopter intervention





We are
here!

REPORT
YOUR POSITION



AREA IDENTIFICATION

GEOGRAPHICAL COORDINATES

- There could be 3 ways to display the coordinates:

Degrees, minutes, seconds: $37^{\circ} 37' 47.20'' \text{ N}$

Degrees, decimal minutes: $37^{\circ} 37.787' \text{ N}$

Decimal degrees: $37.629778^{\circ} \text{ N}$

- It is important to read each single symbol ($^{\circ}$ degrees, ' minutes, " seconds) and dots/commas in the exact order



SS121

Accident site

**THESE COORDINATES
INDICATE THE SAME PLACE:**

Degrees, minutes, seconds:

37° 37' 47.20" N

14° 49' 54.86" E

Degrees, decimal minutes:

37° 37.787' N

14° 49.914' E

Decimal degrees:

37.629778° N

14.831906° E

Accident site:

37° 37' 47.20" N 14° 49' 54.86" E

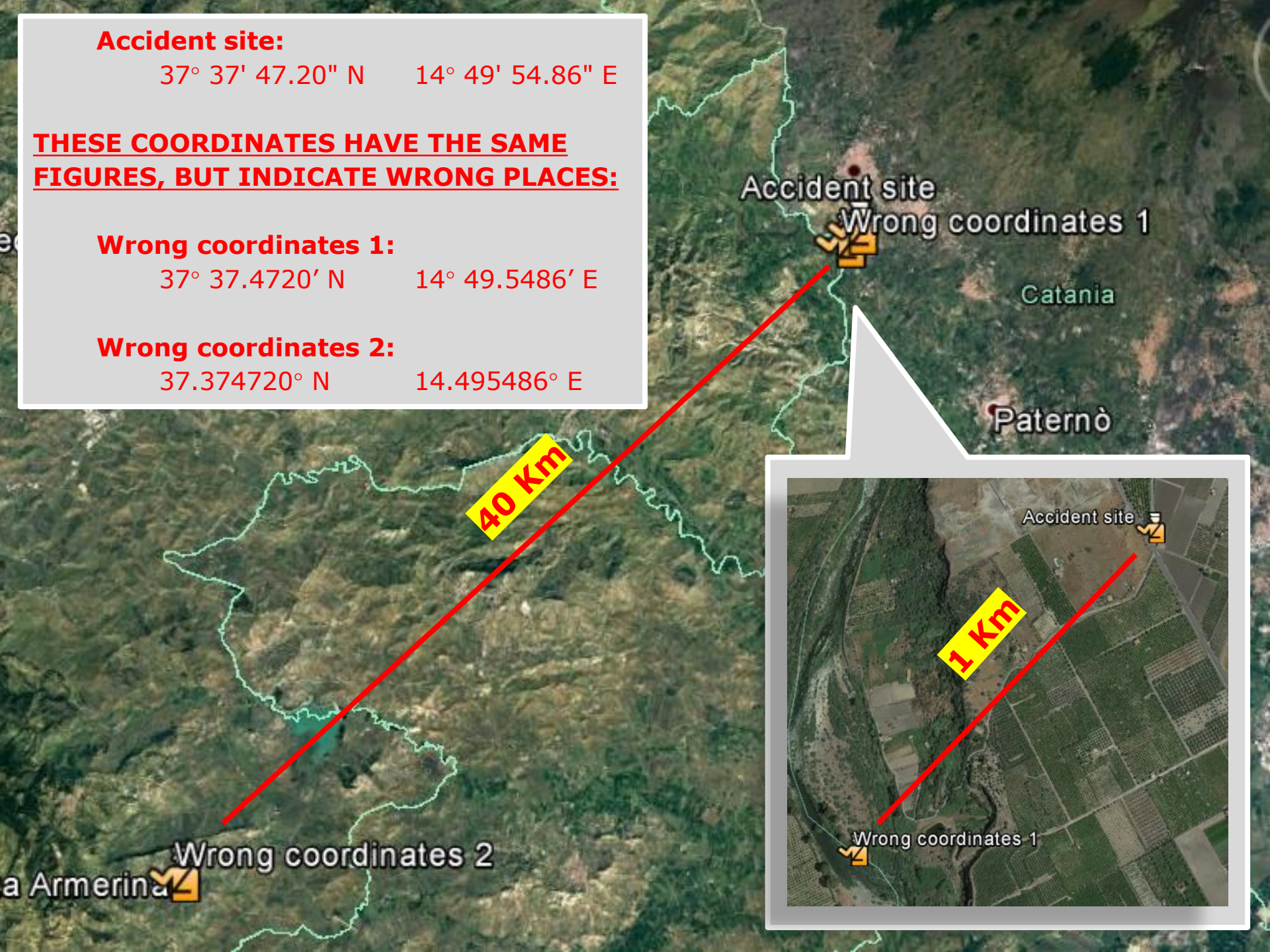
**THESE COORDINATES HAVE THE SAME
FIGURES, BUT INDICATE WRONG PLACES:**

Wrong coordinates 1:

37° 37.4720' N 14° 49.5486' E

Wrong coordinates 2:

37.374720° N 14.495486° E



Accident site

Wrong coordinates 1

Catania

Paternò

40 Km

Wrong coordinates 2

a Armerina

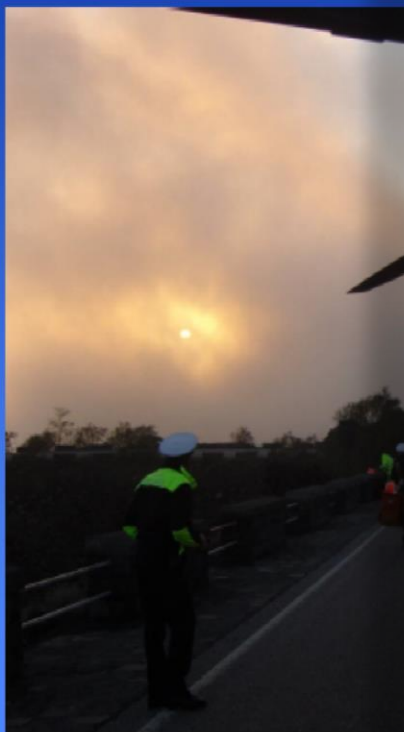
Accident site

1 Km

Wrong coordinates 1

HELICOPTER MISSION REQUEST

1st Edition, September 2016



HELICOPTER MISSION REQUEST CHECKLIST - R.O.M.A.

R	Request – Type of mission – Specify position
Type of mission	
a) Emergency Medical Service?	<input type="checkbox"/>
b) Transport of personnel (number? specific equipment? destination?)	<input type="checkbox"/>
c) Transport of goods (typology? Dangerous? Weight? Dimension? packaging?)	<input type="checkbox"/>
d) Firefighting (where? other aircraft/vehicles/personnel in the area?)	<input type="checkbox"/>
e) Rescue (helicopter fitted with winch? is it required?)	<input type="checkbox"/>
Position	

County: _____
GPS coordinates (verify lat/long units):
Degrees, Minutes, Seconds
Degrees, Minutes, fraction of Minutes

O	Obstacles – Verify obstacles
Type of obstacle	
Power lines, pylons, antennas	<input type="checkbox"/> no
Funicular, lifts, cables	<input type="checkbox"/> no
Drones, other flying objects	<input type="checkbox"/> no
Animals, birds (e.g. seagulls)	<input type="checkbox"/> no

M	Meteorological – Report weather
Visibility	<input type="checkbox"/> Good (> 5 km)
Wind	<input type="checkbox"/> Light
Conditions	<input type="checkbox"/> Cloudy, overcast
Mountain tops	<input type="checkbox"/> Visible
Phenomena	<input type="checkbox"/> Hail

A	Area – Prepare area - Safety
Type of area	<input type="checkbox"/> Prepared (helipad) <input type="checkbox"/> Road <input type="checkbox"/> Sports field (Golf) <input type="checkbox"/> Ground, grass field <input type="checkbox"/> Flooded <input type="checkbox"/> Other:
Lights (at night)	<input type="checkbox"/> Not available
Surface	<input type="checkbox"/> Flat

Personnel in the area	Name
Firefighters	
Medical	
Police	

Other – Supplementary information			
Planned stops?	<input type="checkbox"/> no	<input type="checkbox"/> yes	Where? _____
Persons to be embarked?	No.: _____	Total weight: _____	Where? _____
Passengers tel. No. (at least one): _____			
Goods:	Type: _____	Total weight: _____	Dimensions: _____



Please, keep holding on for...

the
last
32
slides...



OK... just kidding!



QUESTIONS?



EASA
European Aviation Safety Agency



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Your safety is our mission.

An agency of the European Union

