



## CHECK REPORT ON THE MEDICAL SERVICES FOR WRC

<b>Name of the event</b>	<b>Date of the intervention</b>
<b>RALLY ITALIA SARDEGNA</b>	<b>6 - 10 JUNE 2018</b>

*NB: (All notes and comments are given at the end of the report).*

**1) MEDICAL QUESTIONNAIRE:**

<b>Handed in:</b>	Before	No		Complete	<b>X</b>	incomplete	
<b>Not received:</b>	Modified on site*	Yes	<b>X</b>	Partially	<b>X</b>	Totally	
	Completed on site	Yes		Partially		Totally	

\* Detailed list of working teams was provided.

**2) SAFETY PLAN:** Received in PDF one week before arrival. Printed versions, in separate booklets for every special stage, well prepared with lots of important details, were provided upon my arrival.

**3) SPECIAL STAGES:**

<b>Leg 1: how many?</b>	2 (SD + SSS)	Special stages checked:	<b>SD + SSS</b>		
<b>Leg 2: how many?</b>	8	Special stages checked:	<b>SS 2/6, 3/7, 4/8, 5/9</b>		
<b>Leg 3: how many?</b>	7	Special stages checked:	<b>SS 10/14, 11/15, 12/16, 13</b>		
<b>Leg 4: how many?</b>	4	Special stages checked:	<b>SS 17/19, 18/20</b>		
How many "gravel" stages?	20				
How many "asphalt" stages?	--				
How many "mixed" stages?	1				
How many "snow" stages?	--				
How many "rugged terrain" stages?	--				
Distance between two "radio" or "inter" points:	Maximum:	3,43	Minimum:	0,86	
Distance between two medical posts:	Maximum:	7,49	Minimum:	4,34	
Time taken to reach a medical point:	Maximum:	11:43	Minimum:	6:10	

*NB: The short super specials were not taken into account in the calculation of the distances and times between the medical points.*

**4) HELICOPTER:**

<b>B) Belonging to a public or private rescue service:</b>									
Number:	1	Type:	Airgreen EC145			Capacity for injured persons:	2		
Origin:	<b>Private:</b>	<b>X</b>	<b>Civil Administration</b>			<b>Military Administration</b>			
Helicopter on Standby:	<b>Yes</b>	<b>X</b>	<b>No</b>		Where?	<b>Close to special stages</b>			
Basic equipment:	<b>Present</b>	<b>X</b>	<b>Absent</b>						
Additional equipment: (for helicopter winching, KED, other)	<b>Yes</b>	<b>X</b>	<b>No</b>						
If yes, specify: <b>Winch</b> (all equipment is in conformity with App H Suppl.3)									
Absence or non-use in case of force majeure:	<b>Yes</b>		<b>No</b>	<b>X</b>					
Resuscitation doctor present in a helicopter:	<b>Yes</b>	<b>X</b>	<b>No</b>						
Rugged terrain rescue specialist present in a helicopter:	<b>Yes</b>	<b>X</b>	<b>No</b>						
Same person:	<b>Yes</b>		<b>No</b>	<b>X</b>					

5) HOSPITALS:

Already seen	Yes	X*	No	
1 <sup>st</sup> visit	Yes		No	

\* A follow-up visit was undertaken at the best equipped hospital to update information

6) SERVICE PARKS MEDICAL UNIT:

In conformity:	Yes	X	No	
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7) PREMESIS FOR ANTI-DOPING CONTROLS:

In conformity:	Yes	X	No	
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8) MATERIAL FOR THE SPECIAL STAGES:

Medical intervention cars:	Yes	X	No		How many?	13	
<b>Medical intervention car at the start:</b>							
Type:	2WD		4WD	X			
Use:	Solely medical	Yes	X	No			
	Followed by rescue car	Yes	X	No			
	Mixed use	Yes		No	X		
Medical equipment:	In conformity	X	Not in conformity		Better		
<b>Medical intervention cars at intermediate points:</b>							
Type:	2WD		4WD	X			
Use:	Solely medical	Yes	X	No			
	Followed by rescue car	Yes	X	No			
	Mixed use	Yes		No	X		
Medical equipment:	Identical	X	Different		Better		
<b>Resuscitation ambulance (obligatory): See comments</b>				Yes	X	No	
• One per special stage				Yes	X	No	
• One on standby for several special stages				Yes		No	X
• Several per special stage				Yes		No	X
• Resuscitation ambulance equipment:		In conformity	X	Not in conformity		Better	

<b>Normal ambulance:</b>			Yes		No	X
• At the start			Yes		No	X
• At the intermediate points			Yes		No	X
• Normal ambulance equipment:		In conformity		Not in conformity		Better
<b>Satellite ambulances:</b> After every special stage (Total with refuelling 8)						
Number(s) of special stage(s) on which the equipment was			different	--	incomplete	--

**9) DETAILS REQUESTED CONCERNING:**

<b>KED or equivalent:</b>	Yes	X	No	
Where?				
• Ambulance	Yes	X	No	
• Intervention car	Yes	X	No	
• Resuscitation ambulance	Yes	X	No	
• Helicopter	Yes	X	No	
<b>Beanbag:</b>	Yes	X	No	
Where?				
• Ambulance	Yes	X	No	
• Intervention car	Yes	X	No	
• Resuscitation ambulance	Yes	X	No	
• Helicopter	Yes	X	No	
<b>Cervical collar:</b>	Yes	X	No	
Where?				
• Ambulance	Yes	X	No	
• Intervention car	Yes	X	No	
• Resuscitation ambulance	Yes	X	No	
• Helicopter	Yes	X	No	

**10) MEDICAL & PARAMEDICAL PERSONNEL ON THE SPECIAL STAGES:**

In conformity with the safety plan:	Yes	X	No	
• Modified:	Yes		No	X
• Punctuality:	Yes	X	No	
• Case of force majeure:	Yes		No	X
Number(s) of special stage(s) on which the personnel was For detail, see "COMMENTS" at the end of the report.	Different	--	incomplete	--
• Appropriate clothing:	Yes	X	No	

**11) QUALIFICATION OF THE MEDICAL OFFICERS FOR THE SPECIAL STAGES:**

<b>At the start:</b>				
• Proficient in resuscitation?	Yes	X	No	
• Experienced in the pre-hospital treatment of accident victims?	Yes	X	No	
<b>Intermediate:</b>				
• Proficient in resuscitation?	Yes	X	No	
• Experienced in the pre-hospital treatment of accident victims?	Yes	X	No	
• other?	Yes		No	X
<b>Paramedic qualified in resuscitation</b> in place of a doctor?	Yes		No	X
• If yes, where?				

## 12) CHIEF MEDICAL OFFICER:

<b>CHIEF MEDICAL OFFICER</b>						
At Rally Control:	<b>Permanently</b>	<b>X</b>	<b>At times</b>		<b>Never</b>	
Elsewhere:	--					
<b>HIS AUTHORISED REPRESENTATIVE</b>						
At Rally Control:	<b>Permanently</b>	<b>X</b>	<b>At times</b>		<b>Never</b>	
Elsewhere:	--					

## 13) GPS:

<b>Number of cars equipped?</b>				
• With distress signal?	<b>Yes</b>	<b>X</b>	<b>No</b>	
• If yes, how many?	<b>All</b>			

## 14) NOTES AND COMMENTS:

### GENERAL INTRODUCTION, SPECIAL STAGES, CONDITIONS

The Rally Italia Sardegna is one full of tradition and is a big attraction for lots of spectators. An experienced administration, enthusiastic officials and the large number of motivated and dedicated marshals made a big contribution to the success of the event.

Twisty, narrow roads with demanding gravel surfaces made the rally highly challenging for the competitors.

The medical services were very efficiently organised and as such should serve as a good example. Under Italy's Motor Sports Sporting Regulations, a medical point is mandatory every seven kilometres, so more than the compulsory number of medical service points were available.

I arrived on 6 June in the late evening, and met with the CMO Claudio Pusineri, and went directly from the airport for an inspection visit of the main hospital in Sassari.

Thereafter, we visited the Rally HQ in Alghero, where I met my guide/translator Alessandro Pavesi and driver Andrea Pusceddu, both of whom were highly competent and assisted my mission to a great extent, for which I am highly grateful. A 4-WD VW Amarok truck was provided for our use, and proved to be very capable and useful.

The layout and main elements of the medical services for special stages were as follows:

Medical Intervention Cars (MIC) were mid-sized 4-WD vehicles (e.g. Land Rover Discovery, Defender) able to transport a patient under resuscitation conditions. The medical equipment was in conformity and an emergency doctor, a nurse and a driver made up the medical team. Two MICs were positioned at the start; one active, one back-up.

A medical point was set up every seven kilometres of a special stage.



Each MIC was accompanied by a Rescue Car (RC) with extrication and firefighting tools provided by CEA. They had a two-man team with race experience, which was well trained and proficient in extrication and firefighting. All these vehicles were very well equipped for their purpose, and had all the necessary tools, 4-WD drive, and were compact and highly suitable for the terrain.

Thus, with two mid-sized vehicles, all elements of medical safety were covered in a very effectively.

After every special stage a “satellite” resuscitation ambulance was on standby at the nearest tarmac evacuation road junction for evacuation purposes, eventually taking over the casualties from the MIC and transferring them to the referral hospital.

Resuscitation ambulances were also present at every refuelling point, and a further two in the Service Park Medical Unit.

The weather was fine, with surprise rainfall on the first two days of the rally. While on the one hand, this helped to keep down the dust, on the other hand, it caused difficulties due to slippery mud.

## **SHAKEDOWN**

The shakedown was held 15 km from the Service Park, and was highly representative of the character of the special stages to follow. Medical services were set up as explained above, and everything ran smoothly and according to plan.

A simulation exercise at the end of shakedown was unfortunately not possible as the CoC stated that they had not been able to make the necessary arrangements.

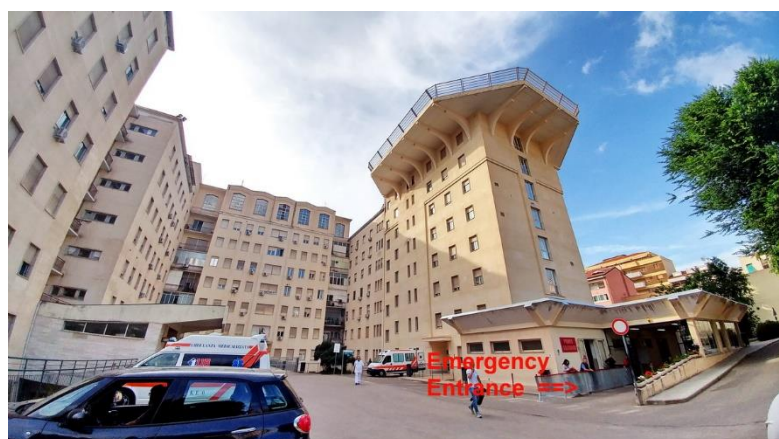
## **HELICOPTERS**

A medical helicopter, an Airgreen EC145, was inspected at its location at the SSS, and was found to be highly operational. It was adequately equipped, with a winch, and personnel consisting of a rugged terrain specialist, emergency doctor and a nurse. During the rally, it was on standby at central locations of active stages.



## **HOSPITALS**

As the stages were quite far from the Service Park in Alghero and were run in the east (Day 2), north (Day 3) and west (Day 4), several hospitals were allocated. The Sassari - Ospedale SS Annunziata was the main referral hospital as it was centrally located, and was the biggest one with the best facilities, covering all disciplines, including a dedicated burns unit. An inspection visit was undertaken at this hospital.



An easily accessible emergency trauma unit with two trauma resuscitation units was available. A highly functional 20-bed Intensive Care Unit was present, with two beds being reserved for any incidents during the rally.

Despite a helipad present on the roof of the building, it was not suitable for bigger helicopters and hence not in use. A heliport one kilometre away was available, with convenient ambulance transfer.

Ospedale Civile in Alghero, Ospedale Giovanni P. II in Olbia and Ospedale A. Segni in Ozieri were the alternatives.



An approach timetable from special stages to different hospitals had been prepared to facilitate the decision on which hospital to choose at which point. I found it to be quite functional and useful.

### **SERVICE PARK MEDICAL UNIT**

A medical unit was set up at a central location at the entrance of the Service Park. It consisted of a tent with four stretcher beds and all the equipment required for resuscitation in compliance with Appendix H, Supplement 4. Emergency doctors and nurses were present at the unit. Two resuscitation ambulances were on standby for transfer to the Alghero hospital located nearby (2.3 km, 5-7 minute drive).

Two shortcomings should be mentioned:

1. As ventilation was quite compromised inside the tent, it became quite hot.
2. Although centrally located, it was out of sight and not easily recognisable, so effective signposting should be prepared.



### **MICs**

As already mentioned, Medical Intervention Cars were 4-wheel drive mid-sized cars suitable for the terrain, and were adequately equipped with medical equipment. Staff consisted of an emergency doctor, a nurse and a driver. Two were present at the start of every special stage, and one each at the intermediary points. They had the capacity to transport a patient under resuscitation conditions. They belonged to the 118 public emergency service network and were marked with the word “ambulance”.

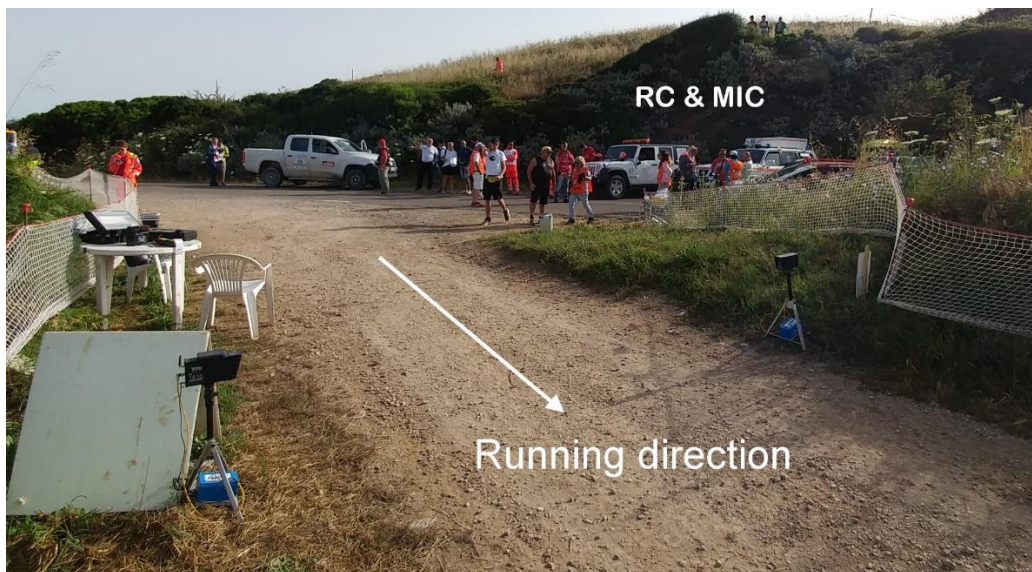
I would also like to mention that every MIC was accompanied by a Rescue Car, which had capabilities for extrication and firefighting, and belonged to CEA safety services. The staff were highly experienced in motor sport interventions, as they worked in circuit races in northern Italy and underwent regular training.



Approach times of all medical points from start to finish were measured by simulating the possible driving speed of the MIC, and all were less than the stipulated ten-minute limit, except in SS2/6 Tula Intermediary 1(3).

Placement errors of medical cars were observed, and corrections were made as follows:

- MIC/RC starting order had to be corrected twice during SS 2/6 Intermediate 2 (6) and SS 17/19 Intermediate 3 (9) by positioning the MIC in front of the RC.
- A blocking official car was moved in SS 12/16 Intermediate 3 (9).
- Medical vehicles were behind the start line. The MIC was moved to a new location in SS 5/9, and the RC was moved to a new location in SS 17/19. In SS 18/20, the MIC and RC were both behind the start line, unfortunately with no appropriate location to be moved to. One possible solution would be to move the laser beam about 10 metres back to create a narrow path on the left side for the entrance of emergency vehicles. This should be accomplished next year. For this year, the solution proposed by the CoC was not to queue rally cars behind the start line, but to let them wait further back, and assign two marshals to push the rally car on the line rapidly, backwards if needed.



One important drawback in the functioning of the MICs was that they were not equipped with radios, either in-car, or portable. Radio transmitters were built into the Rescue Cars, which was a quite limiting compromise, as the doctor was responsible for the medical intervention, and he had to be in close contact with the HQ and the CMO. If the MIC had to transport a patient, the GSM network would be the only means of communication, and reception was lacking in several areas. Communications should be enhanced by providing a separate and dedicated medical channel for all medical cars, rather than simply for the RC (CEA) cars.

### **AMBULANCES**

“Satellite” ambulances with transport capabilities under resuscitation conditions were present as follows;

1. After the finish of every special stage,
2. At every refuelling point,
3. At the Service Park Medical Unit.

They were appropriately equipped and in compliance with Appendix H, Supplement 3, with staff consisting of an emergency doctor, a nurse and a driver.

## **MEDICAL PERSONNEL**

The staff were very proficient and highly motivated, with appropriate clothing and “Doctor” labelled tabards. All were experienced in handling trauma patients. A short briefing was made with all teams during stage visits, encouraging them to simulate accident scenarios and to discuss ways of collaborative intervention.



All staff were present on time, and numbers and names were in concordance with the data in the safety plan.

## **INCIDENTS / ACCIDENTS**

1. Hayden Paddon was invited to a reintegration examination on the evening of Wednesday, 6 June. He declared that he had been doing his usual exercise programme without any pain for ten days and had absolutely no discomfort during the recce sessions. His examination showed no movement limitation and no pain. Hence he was declared “fit to race”.
2. After the finish of SS 5, Glenn Macneall, co-driver of car no. 86, got out of the car and fell down, complaining of severe back pain after a jump. After an initial examination in the satellite ambulance, he was transferred to the hospital for a thorough medical and radiological examination. He was discharged with no medical abnormalities. He was examined later in the afternoon by the CMO and was declared “fit to race”.
3. A doping control was performed on Sunday after the race. The premises prepared for this purpose were adequate and there were no problems with the collaboration of chaperones and the DCO.

## **SAS TRACKING SYSTEM**

This functioned without any problems. The CoC remarked that it was a bit slow in comparison with the old system, but was highly accurate. As the GSM network was not of high quality in the area, this may explain the perceived slowness.



## **TRAINING AND EXERCISES**

### ➤ **Extrication exercises:**

All medical personnel, except the teams assigned to the SSS, were ready for the extrication exercise after our inspection of the SSS (7 June 6.30 p.m.). All teams effectively performed an emergency extrication and a rapid extrication onto backboard with helmet/HANS removal and collar application. A demonstration extrication with KED was also done. While scheduled as an exercise, we took our time, and almost converted it to a training session.





➤ **First on Scene Training for drivers and co-drivers:**

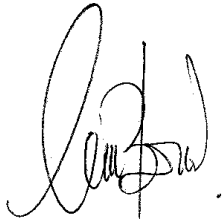
This was not carried out.

**OVERALL APPRECIATION**

- **MEDICAL ORGANISATION:** Effective, efficient and of high quality.
- **MEDICAL DIRECTION:** Very good. Great work by CMO Dr Claudio Pusineri and DCMO Dr Antonello Piras.

**POSSIBLE IMPROVEMENTS**

- Medical vehicle positioning should definitely be after the start, with no obstacles in front of them hindering their quick access to the stage.
- The area reserved for medical intervention vehicles should not be behind barrier tape, as spectators may assume that it is a safe place to watch and accumulate behind the tape, hence obstructing rapid access.
- A radio connection with separate medical channel would be useful for all medical cars and should not be limited to the RC (CEA) cars, as was the case. GSM reception was not good everywhere, and not even available in some areas (e.g. start of Tula). Having only one radio in a specific vehicle is a bad compromise.
- Early assignment of specific doctors and nurses for future rallies should be encouraged, and they should undergo a regular training program.
- As the FIA Medical Car was measuring the time between medical service points it had to be driven rapidly. In areas with many spectators, a warning siren built into the car would be very helpful and improve safety.



**Dr Cem Boneval**

FIA Deputy (Regional) Medical Delegate for WRC