

Noise Pollution

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Submission date: 17-May-2019 10:04PM (UTC+0100)

Submission ID: 107524134

File name: 4867_Todor_Stoykov_Noise_Pollution_167995_20253259.docx (199.06K)

Word count: 1617

Character count: 7868

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For this coursework you are going to develop a noise management plan for a race circuit.

You will need to think about how to work within legislations, alongside local councils and residents to ensure that the circuit is able to run a range of motorsport events. You are also to investigate what noise management and/or modelling systems might be used at the circuits to ensure that any noise restrictions in place are adhered to.

The circuit you are going to be developing this model for will be the previously proposed Circuit of Wales near Ebbw Vale.

Within your noise management plan you will need to include data relating to the surrounding area and also limitations that could be imposed on the circuit. All aspects of noise from the circuit must be considered.

Abstract

Noise pollution caused by different venues on racing circuits is serious and can affect wide areas around the track. This is why nowadays race tracks operate on a strict noise management routine. In today's rising environment cautiousness and health awareness racing circuits have agreed to follow certain times of operation and control the noise pollution by measuring it and adding the needed restrictions in the A weighted decibels to make it as less dangerous for the human ear and the surroundings as possible. Furthermore, the restrictions of the race tracks operations doesn't end there because the noise pollution control can depend on the circuit location in terms of surroundings and different approach that councils have dealing with race tracks.

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Introduction

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By the sport's nature, motorsport is a very noisy activity and undoubtedly this is one of the best parts of the entertainment side of it. To continue with, the noise pollution plan behind the conditions that are being agreed is to maximize the business opportunities available to the racing circuit while at the same time limit the number of motorsport venues on a certain track per year which should make local life more pleasant and limit the duration of noise polluting events. This work will address the key elements that need to be accounted while making a noise pollution plan for a racing circuit.

Circuit of Wales



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Add citation to table, figure, image

The Circuit of Wales is a major project funded by two of Wales' leading financial figures and is most likely to happen soon. The project takes place in the foot of the South side of the Brecon Beacons Mountain where the Brecon Beacons National Park is located as well. This creates a liability for the track and should be accounted while doing a noise pollution plan. To continue with, the track is supposed to be around 3.5 miles in length and it will be surrounded by an automotive technology park with facilities that are planned to be let or sold to companies in the motorsport and automotive industry, to make use of the track and its facilities. As researched in (Automotive test track circuit in Blaenau Gwent, 2019) there are plans for a skills and training facility, at a site location that has been boosted by dual carriageway upgrading work on the Heads of the Valleys Road and improved access to the automotive hub of the Midlands. 6



Add citation to table, figure, image

Noise pollution plan

To make it easier the noise pollution plan will be divided in how different motorsport venues on the track will potentially affect the surroundings and what would be the best solution for the issues. In

our case, Circuit of Wales is planned to be used for different events for example race days with different series during the year, track day events where people can drive to the track with their own car and enjoy a couple of laps the track. Another potential event would be closed testing from racing teams which needs to be accounted.

Race Days procedure

According to (Donington Park - operations time and noise control, 2014) racing circuits in the U.K. could be used for pre-season testing and racing, which happens on weekends, up to sixty days per year. Moreover, tracks can operate between nine in the morning to eight in the evening, exceptions could be made for 24 hour endurance races. To continue with, there are three different race days regarding to the noise pollution control. The first type is called 'unsilenced race days'. A race circuit is allowed to have twenty of these sixty race days on which an unlimited number of race cars could be on the track without any limits on the noise levels generated by the cars. The second type is called '118 decibels days', which are again twenty of the sixty days for the year in which if a car exceeds 118 decibels while performing a static test before the race it would be prohibited from track usage but it is fair to say that there is no limit to the noise made by the racing cars when they are actually racing just like on the last type of race days. The third different kind of race days is called the 108 decibels days on the remaining twenty from the sixty annual race days. During these days race cars that exceed the 108 decibels limit while under a static test will therefore prohibited from going on track.

Track and Test days' procedure

There are effectively two types of test and track days: noisy and quiet. To begin with, the noisy test or track days can be 104 for a year and on these days there is no limit for how many silenced cars can be used but only six unsilenced vehicles can be using the track during testing. Noisy test and track days should be performed on weekdays between nine in the morning and five in the afternoon. They are also not allowed to take place on days before or after two back to back race days. The second type of test and track days is called quiet. On these kind of test and track day's cars on the track must comply with a drive-by noise test limit of 98 decibels. Moreover, there are is no limit of the number of cars that can use the track or the time in which it is being used. To make sure everyone complies with the noise regulation the circuit, the noise produced by the vehicles is monitored by a noise meter that stands on the trackside and if a car goes over the limit of 98 decibels it is given a warning and in case of failure to comply with the limits on second monitoring it is removed from the track. Normally race tracks are used almost daily every year because of the well prepared and planned control of the noise levels and frequency of the noisy venues and the duration of other events, if there aren't any circuit activities that need to meet specific noise levels in local villages.

The Councils' role

If we take an example with the relationship between Donington Park and the North West Leicestershire District Council (Donington Park - operations time and noise control, 2014) where the track is located, the council requires the circuit to provide a monthly schedule of the venues before the start of every month. Furthermore, officers are in charge of making sure the proposed use days do not exceed the limits implemented by the agreed condition. Then council officers make pre-arranged visits to the race track to review the operating cycle of the noise testing and marshalling during different sessions and events. Sometimes council officers make unannounced visits on the

circuit to check on the compliance with the rules and regulations for example checking the number of unsilenced cars during a noisy test or track day, which is why while performing track activities people should always comply with the regulations. According to (Donington Park - operations time and noise control, 2014) North West Leicestershire Council is planning on installing an unattended noise monitoring device to be able to monitor the noise level without stopping of a different number of days at the time of big motorsport events on the circuit. It is known that council officers would attend a noise measurement performed in the surrounding of the track for a short time to test for the noise levels during venues. Moreover, in case of a complaint being made against the noise levels around the race track, the council will make a check on the use of the circuit on the day in question and will make sure that the use of the race track doesn't break any of the conditions agreed by recording the date and the location of the complaint and the reporting in back to the organization that stand behind the race circuit which meets once every couple of months. After that is done, the council can make sure that the track use was in compliance with the regulations by checking the live noise reading from the trackside meter.  12

Conclusion

To conclude with, the trackside noise monitoring devices have had a great affect on how any track activities run in order to minimize the noise pollution caused by the vehicles. Moreover, the national noise regulations are the same for all big circuits and the Circuit of Wales should not be an exception. In order to operate a race track on which there are multiple events from international racing series to test and track days it is from big importance to comply with noise management rules about the frequency and the level all the time.  13

Bibliography

 14
Automotive test track circuit in Blaenau Gwent. (2019, may 17). Retrieved may 17, 2019, from walesonline: <https://www.walesonline.co.uk/business/business-news/plans-major-automotive-test-track-16290513>

Donington Park - operations time and noise control. (2014, july 30). Retrieved may 2019, from North West Leicestershire District Council:
https://www.nwleics.gov.uk/pages/noise_from_donington_park_race_circuit

Noise Pollution

GRADEMARK REPORT

FINAL GRADE

35/100

GENERAL COMMENTS

Instructor

Your report is nearly 1000 words under the guided word count and this shows because there are numerous areas that you have not covered in the report. These include;

- Acts and legislations
- Modelling systems available
- Information relating to local area
- Clear Noise Management plan for the circuit.
- Lack of research.

This coursework feels like it was very rushed and it does not meet the assignment brief fully.

PAGE 1



Comment 1 | Prof Prac

All reports should have a title page and contents page.



Comment 2

It's unusual to put the assignment brief at the beginning of a report.



Missing ","

Missing comma:

Though it may not always be grammatically necessary, a comma can often help to prevent a misreading. When a sentence opens with an introductory element (a phrase, clause or word that is logically related to another phrase or clause in the same sentence), it is a great help to your reader to place a comma after that introductory element. Such phrases will often begin with words like "because," "while" or "although," as in the following example: "While everyone was

fighting, the bear wandered away." As you can see, without the comma, the sentence would be confusing.



Comment 3 | Prof Prac

This section doesn't make sense, it suggests that your work needs to be proof read.



Comment 4 | Prof Prac

New chapters should start on a new page.

PAGE 2



Add citation to table, figure, image

This type of source (table, figure, or image) also needs a citation. When adding a table, figure, or image, it is important to share where the source was retrieved. Include the appropriate citation for this item.



Comment 5 | Prof Prac

All images should be numbered and labelled.



Comment 6 | C&I Skills

You have demonstrated that you have researched and understood what the circuit development was planned to be.



Add citation to table, figure, image

This type of source (table, figure, or image) also needs a citation. When adding a table, figure, or image, it is important to share where the source was retrieved. Include the appropriate citation for this item.

PAGE 3



Comment 7 | K & U Subject

This is the allowance for Donington, different circuits have different allowances, you could have analysed different circuits to look for an average value.



Comment 8 | C&I Skills

There are no justification or critical analysis to your plans. You have just copied what Donington are doing.



Comment 9 | Literature

Reference a monitoring system that would be suitable to do this.



Comment 10 | **Prac Skills**

You were meant to give examples of available monitoring systems that were available to do this.



Comment 11 | **K & U Subject**

This section should have included information relating to the legislations that are in place which the council can use.

PAGE 4



Comment 12 | **Prac Skills**

You were asked to discuss what modelling systems were available and any limitations that might be used.



Comment 13

no comment



Comment 14 | **Literature**

This is not enough references for a Level 5 report. I would expect to see a wider range of sources. There should have been noise legislations referenced as this was specifically mentioned on the assignment brief.

All the research and information included appears to come from the lectures and it does not look like you have done any external research.

LITERATURE

Unsatisfactory
30-39%

(including reading, referencing, academic conventions and academic honesty)

OUTRIGHT FAIL 0-29%	Little or no evidence of reading and/or reliance on inappropriate sources. Views and findings mostly unsupported and non-authoritative. Referencing conventions used incoherently or largely absent.
UNSATISFACTORY 30-39%	Poor engagement with essential reading. No evidence of wider reading. Reliance on inappropriate sources, and/or indiscriminate use of sources. Heavily reliant on information gained through class contact. Inconsistent and weak use of referencing.
SATISFACTORY 40-49%	Engagement with a limited range of mostly relevant and credible sources. Some omissions and minor errors. Referencing conventions evident though not always applied accurately or consistently.
GOOD 50-59%	Engagement with an appropriate range of literature, including sources retrieved independently. Some over-reliance on texts. Referencing may show minor inaccuracies or inconsistencies.
VERY GOOD 60-69%	Engagement with a wide range of literature, including sources retrieved independently. Selection of relevant and credible sources. Very good use of referencing, with no/very few inaccuracies or inconsistencies.
EXCELLENT 70-84%	Engagement with an extensive range of relevant and credible literature. Consistently accurate application of referencing.
EXCEPTIONAL 85-100%	Exceptional engagement with an extensive range of relevant and credible literature. High-level referencing skills consistently applied.

K & U SUBJECT

Satisfactory
40-49%

Knowledge and Understanding of Subject. Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.

OUTRIGHT FAIL 0-29%	Major gaps in knowledge with unsatisfactory, uncritical understanding of the subject matter. Much irrelevant material. Substantial inaccuracies. Significantly flawed understanding of the main methods of enquiry in the discipline.
UNSATISFACTORY 30-39%	Fragmentary knowledge, with only superficial critical understanding. Some significant inaccuracies and/or irrelevant material. Incomplete or partially flawed understanding of the main methods of enquiry in the discipline.
SATISFACTORY 40-49%	Limited but adequate knowledge and critical understanding of the well-established concepts and principles within the subject area, with a few gaps in the selection of material. A narrow critical understanding of the main methods of enquiry.
GOOD 50-59%	Knowledge is reasonably detailed and accurate. A good critical understanding of the well-established concepts and principles and the main methods of enquiry, with minor

gaps in the selection of material.

VERY GOOD 60-69% Knowledge is reasonably extensive. Exhibits very competent critical understanding of the well-established concepts and principles of the subject and the main methods of enquiry. Breadth and depth of knowledge.

EXCELLENT 70-84% Excellent, detailed knowledge and highly critical understanding of the well-established concepts and principles of the subject and the main methods of enquiry.

EXCEPTIONAL 85-100% Exceptionally detailed knowledge and outstanding critical understanding of the well-established concepts and principles of the subject and the main methods of enquiry. May go beyond established theories.

C&I SKILLS

Satisfactory
40-49%

(Evaluate underlying concepts and principles of a subject and interpret qualitative and quantitative data in order to develop lines of argument and make sound judgements.)

OUTRIGHT FAIL 0-29% Wholly or almost wholly descriptive work. Little or no critical evaluation and analysis of concepts and principles. Failure to develop arguments, leading to illogical or invalid judgements. Unsubstantiated generalisations or opinion, made without use of any credible evidence.

UNSATISFACTORY 30-39% Largely descriptive work, with superficial use of critical evaluation and analysis of concepts and principles. Weak development of arguments and judgements. Information accepted uncritically, uses generalised statements made with scant evidence and unsubstantiated opinions. Ideas sometimes illogical and contradictory.

SATISFACTORY 40-49% Limited attempt at critical evaluation and analysis of concepts and principles, tending towards description. Some evidence to support arguments and judgements but these may be underdeveloped, with a little inconsistency / mis-interpretation or failure to fully recognise limits of knowledge.

GOOD 50-59% Some critical evaluation and analysis of concepts and principles, though descriptive in parts. An emerging awareness the limits of their knowledge and ability to use evidence to support the argument though with some tendency to assert/state opinion rather than argue on the basis of reason and evidence. Mostly valid arguments and logical judgements.

VERY GOOD 60-69% Sound critical evaluation and analysis of concepts. Is selective in the range of evidence used and synthesises rather than describes. Ability to devise arguments that show awareness of different stances, and use evidence convincingly, to support appropriate and valid judgements.

EXCELLENT 70-84% Excellent critical evaluation and analysis of concepts and principles leading to logical, evidence-based, reasoned arguments and judgements. Explicit recognition of other stances and a strong awareness of the limits of their knowledge. A capacity for independent thought and ability to 'see beyond the question', suggesting some grasp of the broader field and wider concepts.

EXCEPTIONAL 85- Outstanding critical evaluation and analysis of concepts and principles. Uses

100% evidence exceptionally well to connect ideas, and support highly logical and persuasive, arguments and judgements. Evidence of independent thought and ability to 'see beyond the question', suggesting a clear grasp of the broader field and wider concepts. Perceptive recognition of the limits of their knowledge, and how this influences their analyses and interpretations.

PRAC SKILLS

Unsatisfactory
30-39%

(Different approaches to solving problems in particular contexts.)

OUTRIGHT FAIL 0-29%	Limited or no use of established methods, materials, tools and/or techniques. Little or no appreciation of the context of the application. Limited understanding of the application of theory to practice or making appropriate links between the two. Very weak problem-solving skills outside the context in which they were first studied.
UNSATISFACTORY 30-39%	Rudimentary application of established methods, materials, tools and/or techniques but without consideration and competence. Flawed appreciation of the context of the application. Weak understanding of the application of theory to practice, with only occasional evidence of making appropriate links between the two. Weak problem-solving skills outside the context in which they were first studied.
SATISFACTORY 40-49%	An adequate awareness and mostly appropriate application of established methods, materials, tools and/or techniques. Basic appreciation of the context of the application. Theoretical knowledge and understanding applied in practice, but not always making logical links between the two. Can identify problems and propose basic solutions outside the context in which they were first studied.
GOOD 50-59%	A good and appropriate application of established methods, materials, tools and/or techniques. Clear appreciation of the context of the application. Mainly consistent, accurate and logical application of theory to practice, making appropriate links between the two. Can identify problems and propose mostly appropriate solutions outside the context in which they were first studied.
VERY GOOD 60-69%	A very good application of a range of established methods, materials, tools and/or techniques. Very good consideration of the context of the application, with perceptive insights. Consistent, accurate and logical application of theory to practice, making appropriate links between the two. Can identify problems and propose appropriate solutions outside the context in which they were first studied. Evidence of some creativity.
EXCELLENT 70-84%	An advanced application of a range of established methods, materials, tools and/or techniques. The context of the application is well considered, and insightful. Consistent, accurate and logical application of theory to practice, making well-developed links between the two. Can identify problems and propose excellent, creative solutions outside the context in which they were first studied.
EXCEPTIONAL 85-100%	Exceptional levels of application and deployment skills using established methods, materials, tools and/or techniques. Consistent, accurate and logical application of theory to practice, making highly developed links between the two. Can identify routine and non-routine problems and propose quite sophisticated, creative solutions outside the context in which they were first studied.

(Communicate the results of their study/work accurately and reliably, and with structured and coherent arguments; the qualities needed for employment requiring the exercise of some personal responsibility within a structured and managed environment.)

OUTRIGHT FAIL 0-29%	Communication medium is inappropriate or misapplied. Work is poorly structured, disorganised and/or confusingly expressed. Very weak use of language and/or very inappropriate style. Failure to work effectively as part of a group. Little or no evidence of the skills for employment requiring the exercise of personal responsibility and decision-making.
UNSATISFACTORY 30-39%	Communication medium is poorly designed and/or not suitable for the audience. Work is poorly presented in a disjointed manner. It is loosely, and at times incoherently, structured, with information and ideas often poorly expressed. Weak use of language and/or inappropriate style. Flawed approach to group work, meeting only partial obligations to others. Limited evidence of the skills for employment requiring the exercise of personal responsibility and decision-making.
SATISFACTORY 40-49%	Can communicate in a suitable medium for the audience but with some room for improvement. Mostly ordered presentation and structure in which relevant ideas / concepts are reasonably expressed. Work may lack coherence in places. Can work as part of a group, meeting most obligations to others but perhaps with limited involvement in group activities. Demonstrates the basic skills for employment requiring the exercise of personal responsibility and decision-making, with some areas of minor weakness.
GOOD 50-59%	Can communicate effectively in a suitable medium for the audience, but may have minor errors. Mostly coherent, organised work, in a suitable structure and is for the most part clearly expressed. Can work effectively independently and/or as part of a team, with clear contribution to group activities. Demonstrates the skills for employment requiring the exercise of personal responsibility and decision-making, with some areas of strength and some of minor weakness.
VERY GOOD 60-69%	Can communicate well, confidently and consistently in a suitable medium for the audience. Work is coherent, fluent, well-structured and organised. Can work very well autonomously and/or as part of a team, with very good contribution to group activities. Demonstrates very good skills for employment requiring the exercise of personal responsibility and decision-making, with just occasional minor weakness.
EXCELLENT 70-84%	Can communicate professionally confidently and consistently in a suitable medium for the audience. Work is coherent, very fluent and is presented proficiently. Can work autonomously with initiative. Where relevant can work professionally within a team, showing leadership skills as appropriate, and meeting obligations. Demonstrates excellent skills for employment requiring the exercise of personal responsibility and decision-making and an appetite for further development.
EXCEPTIONAL 85-100%	Can communicate with an exceptionally high level of professionalism, highly suitable for the audience. Work is exceptionally coherent, very fluent and is presented

professionally. Can work exceptionally well within a team, showing leadership skills. Demonstrates exceptional skills for employment requiring the exercise of personal responsibility and decision-making and an appetite for further development.