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Review Paper on Locomotives in Trains

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***Abstract:** This document gives information about the locomotives used in the train on how to working itself by motion transfer from one to another. In this, era the steam locomotive has been transformed in appearance and characteristics. The diesel engine has been applied to passengers and freight trains. Many of the ideas concerning the application of electric locomotive are still valid today, but progress in transportation engineering has become so accelerated.*

I. INTRODUCTION

When the ignition of diesel engine fuel is connected with the electric generator to electricity power motor is connected to the wheel of locomotives. A locomotive based on an internal combustion engine. When engine heat generated from compression of air during the upward cycle stroke to ignite the fuel. In parts of the world, diesel locomotives are the primary hauling power trains. The diesel locomotives are similar to a road vehicle in having an internal combustion engine as the primary source of power. The internal combustion engine it how it working takes place in locomotives we will study in it. In a small RPM hand at a very high RPM, the engine can explode that the working process and the to produce a current flowing and how it's processed in locomotives.

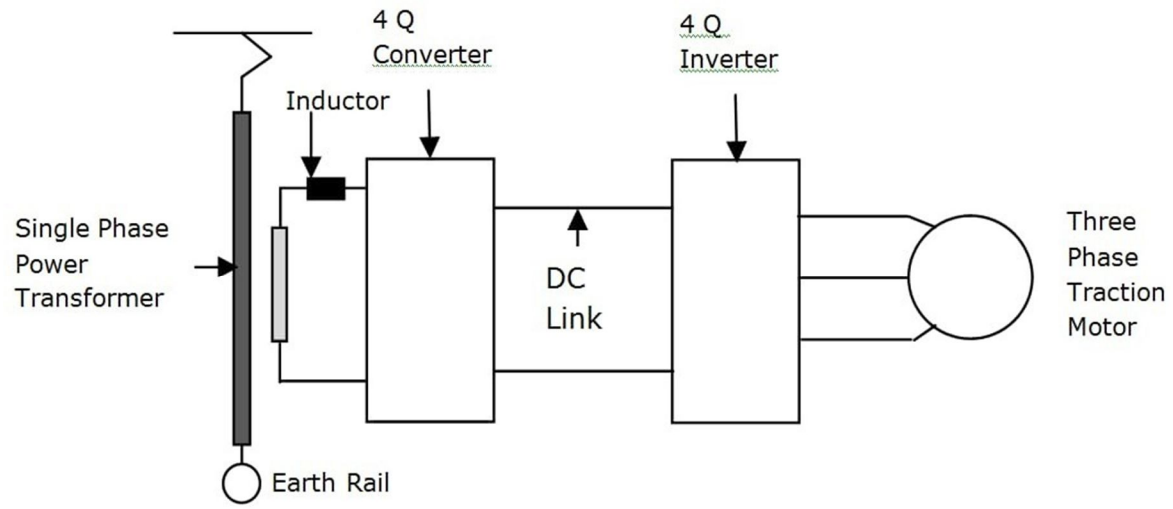

Fig 1.Basic structure of locomotive

II. WORKING OF LOCOMOTIVES

In the diesel locomotives are the primary hauling power trains. Diesel locomotives are an internal combustion engine as the primary source of power.

A locomotive required torque from an internal combustion engine. An electric motor can provide maximum torque at very low RPM. Therefore locomotives use an internal combustion engine to drive a generator that produces electricity (The diesel engine of a locomotives runs at 900 RPM).to produces the required electrical energy to power (as shown in fig2). The traction motor as combustion of a diesel internal combustion engine drives a generator to produces alternating current. The alternating current is set to require voltage by the transformer is fluctuating and cannot be fed directly to the traction converts it to direct current is converted by invertor to three phases alternating current which power the tractionmotor.

The diesel engine is cooled by a radiator heat produced by the transformer, rectifies and investors are dissipated with blowers. A diesel-electric locomotive is essentially an electric locomotive and that working will takes place in locomotives.

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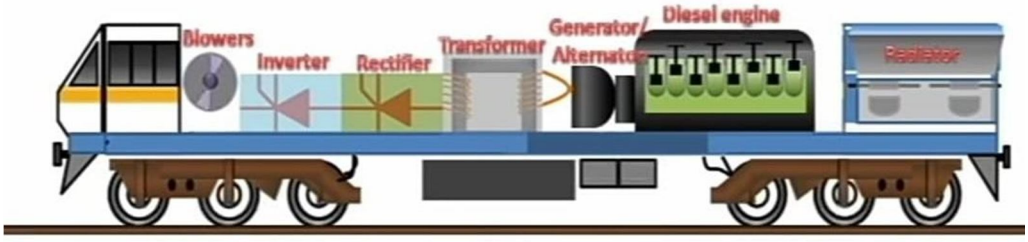

Fig.2working in Locomotives.

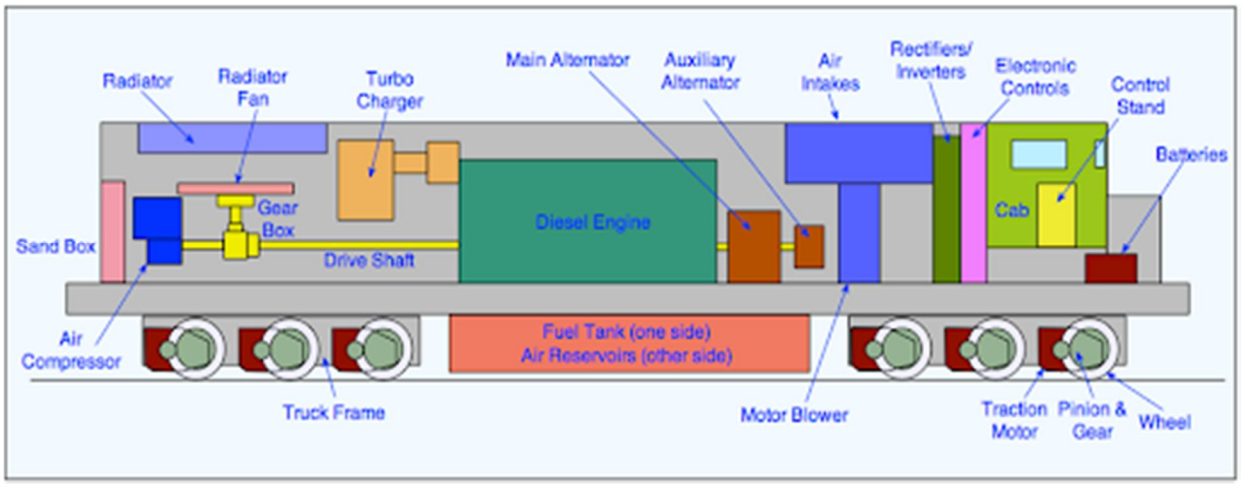

Fig.3 Locomotives parts with all its location.

A. Advantages

1) The diesel engine of locomotive runs high RPM approx1000.
2) In which flowing direct current is converted by invertor to three-phase alternating current, due to which the power is more.
3) The Power converting engine to blower as gradually transfer from one to another (engine to the generator as gradually goes to blower) easy to transfer which has a power generating device electric locomotives.
4) The transformation of the power from (as shown in fig 1) also saves lacking time because it follows linearity (as different locomotives follow different parameters).
5) The locomotives have taken a high capacity of load. The locomotives safety balance is quietly large for passengers.

B. Disadvantages

1) On the transfer of power due to the long parameter some losses occur.
2) When the electric motor is used for a very long time it will losses its property.
3) In multiple units, they are absorbed more energy.
4) The infrastructure cost of a locomotive is high.

III. CONCLUSIONS

The modern generation has many types of locomotives (like a stream, electric, diesel etc.) that have as been built combustion engines and even theses few are for the most part for the energetic efforts. The locomotives have a to build a 1000 or more H.P for mainline service. The smaller locomotives mainly for shunting work but also for light train service coaches. The technical development has now reached a stage where it is highly efficient work the diesel engine up to 1500 H.P. which has built-in a form light enough for use in locomotives.

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In the modern types of stream locomotives with superheated stream and preheated boiler feed water combustion of coal is not less than 1KG of I.H.P.h. As cylinder to the peripheral of the driving wheel and the total fuel efficiently in the locomotives. In the case of a railway in a country where oil is produced and coal has to be imported, the conditions may, of course, be more to the advantage of a Diesel locomotive, whilst on the other hand in a country where coal is produced and oil not and freight rates are fairly high, the steam locomotive may be preferable. A factor in favor of the Diesel locomotive is the absence of the losses inherent to steam locomotives as a result of the boiler having to be fired and steam raised before service is begun, the fire still having to be stoked while the engine is at a standstill, cleaning of the fire after every journey and removing of the fire after the service is ended, a not intrinsic tolerable quantity of useful fuel being thereby lost. A true comparison in this respect can only be made when two locomotives of each kind are run for the same time on the same service, to eliminate accidentally favorable or adverse circumstances.

As regards the cost of lubricating oil the Diesel locomotive is more expensive then the steam locomotive, but no reliable figures are yet available to allow of a true comparison being made. The daily upkeep will be less in the case of a Diesel locomotive, for a steam.

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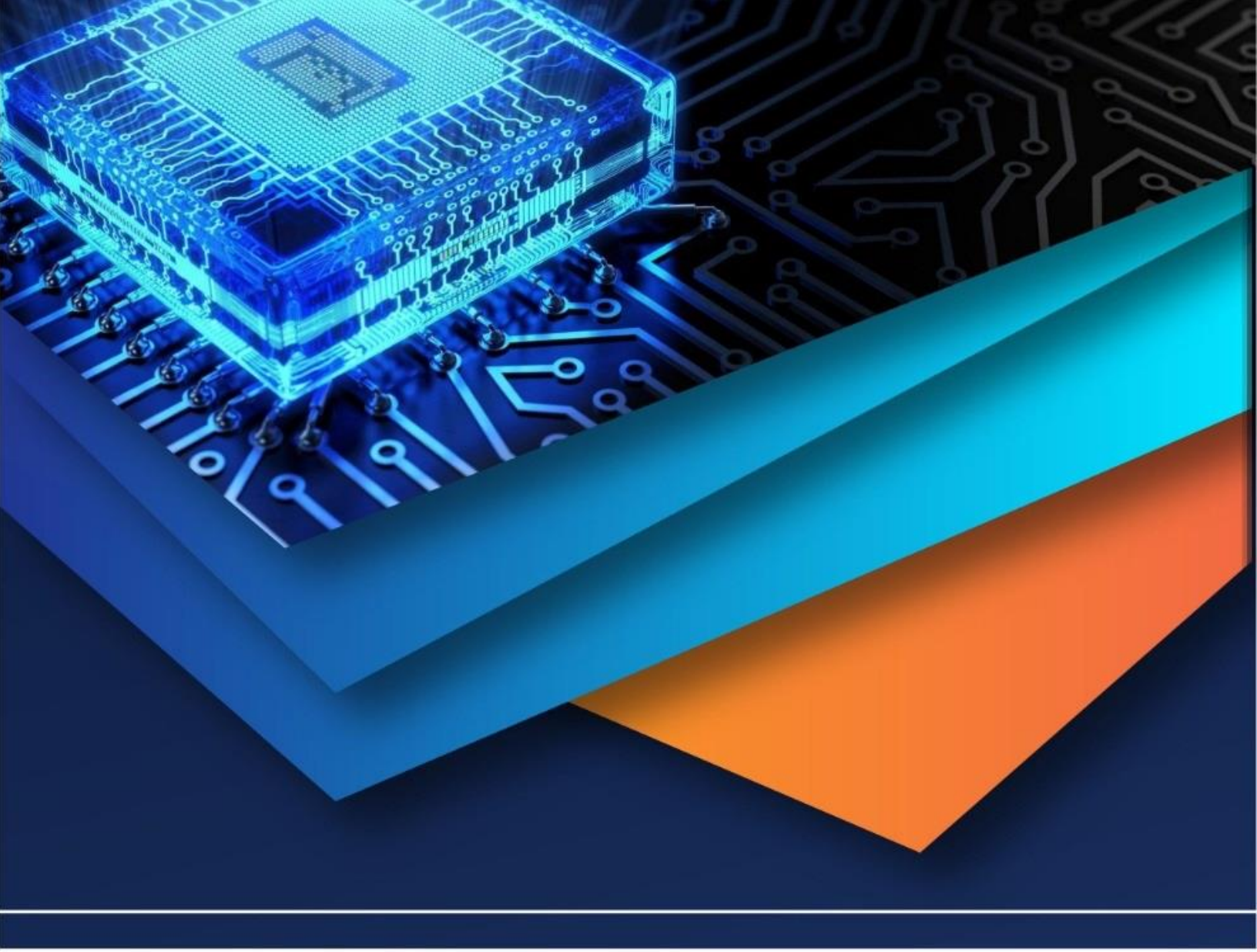

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