

SERVICE LETTER
920277-00

Slow- and Super Slow Steaming Precautions
For Vessels with Mechanical Lubricators

Introduction:

Slow steaming has become a more central parameter in the shipping industry, and consequently an imperative subject to know and care about. It is extremely important to know about the risks and dangers of slow steaming in terms of cylinder condition.

Some of the dangers of slow steaming can be for instance over lubrication, cold corrosion or cracked liners.



Over lubrication



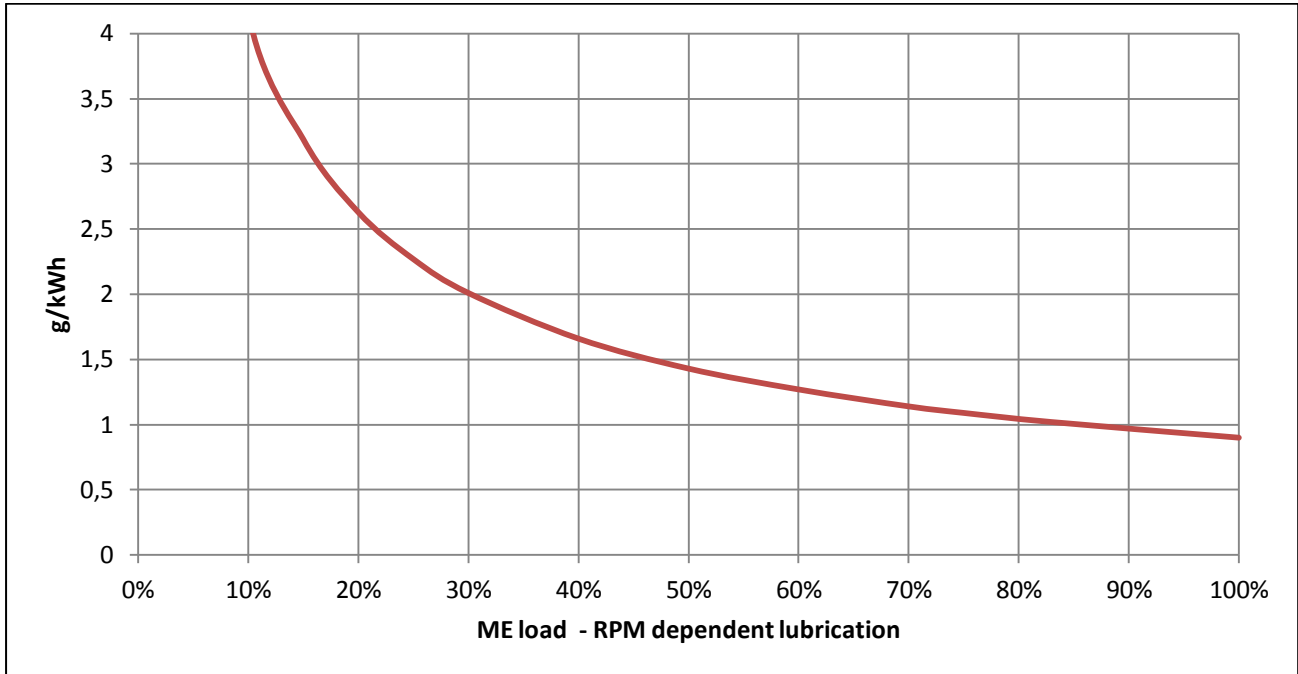
Cracked cylinder liner

All of which are very harmful to the cylinder condition and the engine, and very costly.

This service letter gives our recommendations about how to optimise operation of your vessels with mechanical lubricators for low load operation.

Consequences:

To maintain optimal cylinder condition, you want to make sure that you apply the correct feed rate, and with RPM dependent lubrication systems this requires manual adjustment of lubricators and constant vigilance from the crew.



The RPM regulation algorithm clearly shows the drastic increase in consumption if you do not regulate manually and thus the potential dangers of slow steaming.

Because the adjustment of consumption is to be done manually when operating an RPM dependent cylinder lubrication system, there is a risk of this not being done or being done faulty.

Precautions:

The manual adjustment of cylinder oil feed rate should be based on regular cylinder inspection through scavenge ports, and via photos of cylinder liners, piston top, piston top land, piston ring lands, piston rings, piston skirts and piston under space area.

It is recommendable to carry out a scrape down analysis of drain oil from piston under space, to determine exact condition before adjusting feed rate. This is to determine iron content, TBN residues and water in the oil.

Note that many parameters will influence the results shown in an SDA analysis, such as engine type, liner temperature in combustion area, sulphur content in fuel oil and principle of oil injection (intermittent versus injection at each piston stroke). Just to name a few.

Recommendations:

Hans Jensen Lubricators A/S recommend that you upgrade your RPM dependent mechanical lubricators to one of below two options, if you are to engage in slow- or super slow steaming, or if your vessel operates at varying load. The main purpose and advantage of this is to avoid manual adjustment of feed rate when engine load is changed. This will take place automatically, and thus above consequences are minimised:

- BHP regulation <http://hjlubri.dk/en/product/bhp-regulation>
A mechanical link between fuel regulation shaft and lubricator with the purpose of ensuring optimum cylinder oil / load proportion
- HJ Mechtronic <http://hjlubri.dk/en/product/hj-mechtronic>
An electronic regulation of oil quantity by means of magnetic valves, in order to ensure optimum cylinder oil / load proportion

Advantages of upgrading to load dependent lubrication:

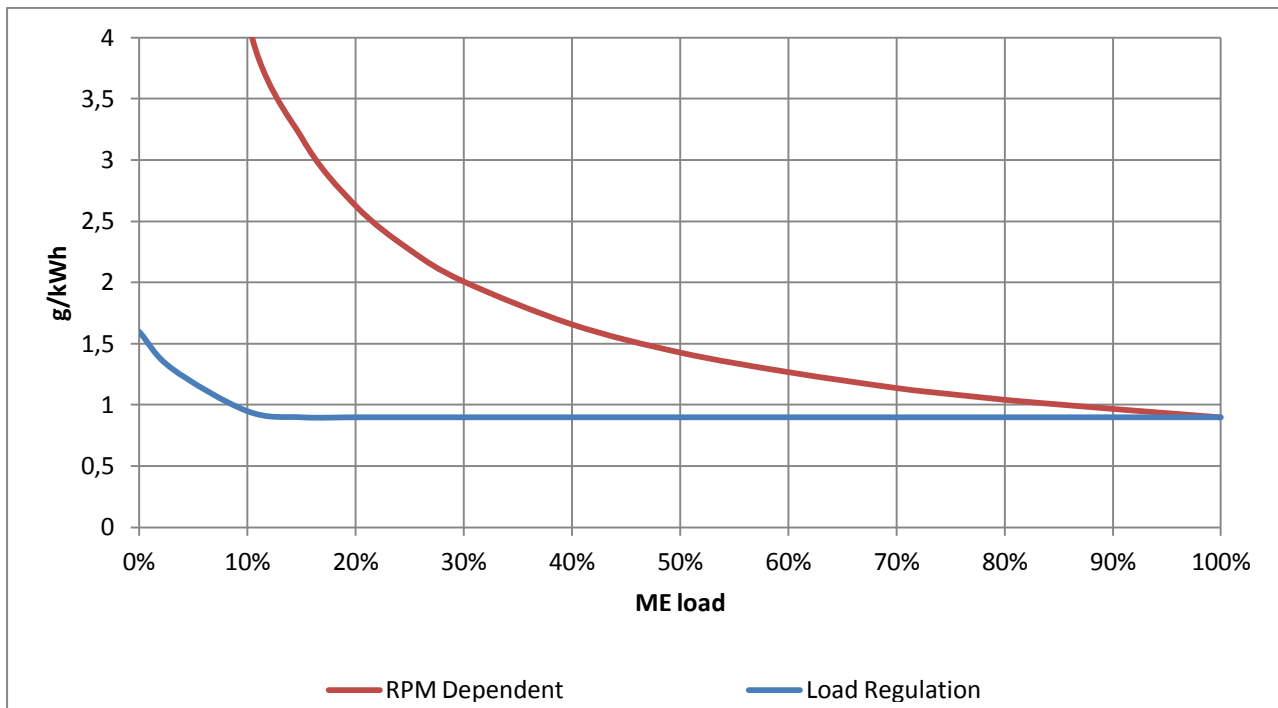
Above mentioned upgrades will result in the following advantages:

1. Improved cylinder condition, due to well adjusted feed rate
2. Reductions in cylinder oil consumption
3. Reduced consumption, leads to reduced pollution
4. Easier life for ship staff
5. Regulation for entire engine at once
6. Regulation depending on sulphur content in fuel



Well lubricated pistons

Below graph clearly shows the advantage of adding a load regulation to your RPM dependent cylinder lubrication system. From the graph you can see that with a load regulation the consumption will remain constant when the load is reduced - resulting in no over lubrication and a healthier engine condition.



Conclusion:

Slow steaming is becoming order of the day in shipping, and it requires thoughtfulness to operate your vessels properly under these circumstances. It is important to assess your cylinder condition before adjusting feed rate, to make sure that it is also well adjusted - particularly if you do it manually on RPM dependent lubricators.

The solution is to upgrade to load dependent lubrication, for the sake of the economy, the condition of the engine, and the environment.