

2. Operating Ranges

2.1 Engine operating range

Running below nominal speed the load must be limited according to the diagrams in this chapter in order to maintain engine operating parameters within acceptable limits. Operation in the shaded area is permitted only temporarily during transients. Minimum speed is indicated in the diagram, but project specific limitations may apply.

2.1.1 Controllable pitch propellers

The engine load must be limited according to the diagram below when operating below nominal speed, in order to maintain engine operating parameters within acceptable limits. Operation in the shaded area is permitted only temporarily during transients to permit smooth overload control.

Note that project specific vibration calculations may result in higher minimum speed than in the diagram below.

The propeller efficiency is highest at design pitch. It is common practice to dimension the propeller so that the specified ship speed is attained with design pitch, nominal engine speed and 85% output in the specified loading condition. The power demand from a possible shaft generator or PTO must be taken into account. The 15% margin is a provision for weather conditions and fouling of hull and propeller. An additional engine margin can be applied for most economical operation of the engine, or to have reserve power.

The propulsion control must also include automatic limitation of the load increase rate. Maximum loading rates can be found later in this chapter.

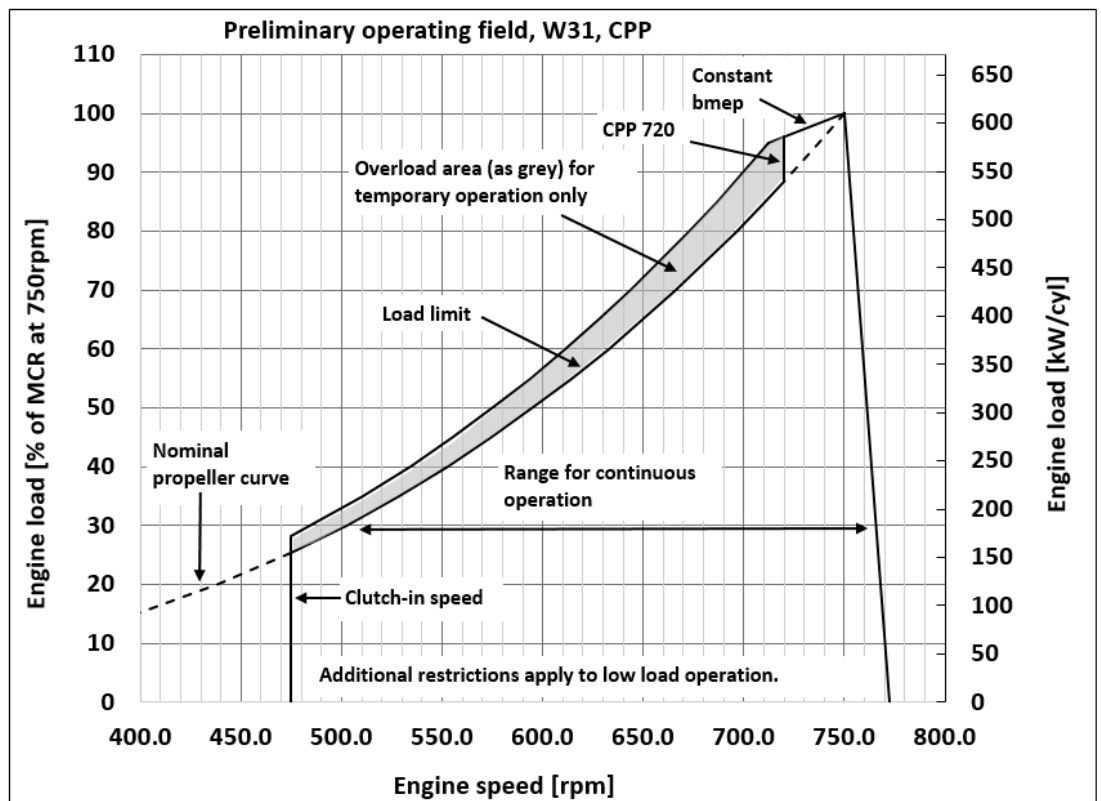


Fig 2-1 Operating field for CP Propeller (DAAF292639C)