

### SHORT CUT-OFF AND FULL THROTTLE

The results to be obtained by allowing the steam at boiler pressure to follow the piston for only a short distance and then complete the stroke under the expansive force of the steam, or of allowing steam pressure lower than boiler pressure to follow the piston for a much greater distance is shown in the following example taken from ordinary service during various tests:

3,160 Class (As Shown in Fig. 1.)

Speed miles per hour	Indicated horse power	Throttle position	Cut-off per-cent	Pounds of water per hour
20	1775	Full	35	40,100
20	1605	Partial	65	48,800

The above example demonstrates that the steam chest pressure should be maintained as high as possible at all times, in order to accomplish this the steam should be cut off from the cylinders as early in the stroke as the conditions will permit, and the throttle should be opened wide enough so that the steam will have free access from the boiler to the steam chest. If the throttle is only partly opened the pressure will be much less in the steam chest than is possible to obtain with the throttle opened wide. In the tests from which the above example was taken, an engine such as is shown in Fig. 1, would use 5,858 gallons of water per hour under a long cut off and light throttle, while with a short cut off and full throttle the water consumption would be 4,813 gallons, or a difference of 1,045 gallons in favor of the short cut off and full throttle.

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CHRIS AHRENS



## INSTRUCTIONS

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