ABSTRACT

Indonesian have a very vast territorial water which about 3.1 million km$^2$. And to
guard it is not a simple task, and it would require sufficient security fleet. It has been plenty
cases of illegal fishing going on in Indonesia. One of them is the “Penn Yuu” fishing vessel
(trawler) captured by Department of Marine and fisheries. The condition of Penn Yuu is in a
very good shape that it decided to be converted into a patrol boat.

The aim of this final project is to convert the design layout plan of a fishing vessel into
a patrol boat, determine the power of new main engine as the result of the conversions, and
the cost for such a conversion. The conversion process begins by searching numbers of
comparable patrol boat, modify the general arrangement, calculating the resistance,
propulsion systems, weight, freeboard, stability and the cost for the conversion.

The conversion result in a new required power for the main engine is at 2510 kW to
achieve VS at 17 knots, and the general arrangement for conversion. Cost of ship conversion
is Rp 18.651.415.134,- while the cost to build a new ship with the same size is Rp
19.332.335.000,-

By using the benefit cost analysis (B/C), the conversion of the ship have a B/C ratio of
16.57, while to building of a new ship gives B/C ratio of 16.80. Therefore, it is more
economical to build a new ship with the same size than converting the captured vessel.

Keywords: fishing vessel, conversion, patrol boat