

(All flows are reported as revenues including the E.A.C's.)

Alternative 1: Overhaul

	Before Tax Op Costs	Capitalized Investment	Expensed Investment			
	-2200	775	550			
year end	after tax op costs	dep'n tax shield	expense tax shield	net cashflow	discount factor	P.V. net cashflow
2012	-1430	165	193	-1073	0.870	-933
2013	-1473	87		-1386	0.756	-1048
2014	-1517	52		-1465	0.658	-963
2015	-1563	31		-1531	0.572	-876
2016	-1609	31		-1578	0.497	-785
2017	-1658	16		-1642	0.432	-710
2018	-1707			-1707	0.376	-642
2019	-1759			-1759	0.327	-575
					P.V.cashflow	-6531
					Init. Inv.	-1325
					Oppor cost	-445
					PV Sal Val	21
					Total	-8280
		real rate	0.117		Ann.Fac.	5.029
					E.A.C. (Rev)	-1647

NOTES:

1. Operating costs and tax shields are assumed to be flow at year end.
2. Operating costs are expressed in nominal terms and hence increase at the inflation rate of 3% per year.
3. 2012 depreciation tax shield includes \$110,250 from extra \$315000 of depreciation.
4. The incremental opportunity costs of not selling the old boat are calculated as \$515,000 less the tax liability of \$70,000 on a gain of \$200000.



**Conclusion:**

To decide between alternative 1 (overhaul) and 2 (new boat) we need to use the equivalent annual cost (EAC) since alternative 2 has a longer life. Using a real rate of 11.7% we find that alternative 1 has an EAC of \$1,647,000 whereas alternative 2 has an EAC of \$1,682,000. A comparison of the EAC's leads us to choose the overhaul option.

Since the real costs are stable through time, the EAC is computed using the real rate of 11.7%.