

STERN APPENDED SHIP ENERGY SAVING DEVICES: TYPES AND COMBINATIONS											
Location / Device Type	Energy Saving	No. of	Primary								
	Rate	Installs	Ship						Possible Combinations		
	Range in %		Application						(gains can be cumulative)		
Installed after the Propeller											
Propeller Cap Turbine (PCT)	2 to 4	80+	Fixed pitch propellers or CPP with long voyages							PCT with SCN or HPP or FPHFS or TSB or RTF	
Costa Propulsion Bulb (CPB)	2 to 4	300+	Where rudder is on prop center with limited spacing							CPB with SCN or HPP or FPHFS or RTF or TSB	
Rudder Thrust Fin (RTF)	3 to 6	4	To recover prop wake swirl with rudder behind prop							RTF with PCT or HPP or CPB	
Installed before the Propeller											
Simplified Compensative Nozzle (SCN)	4 to 6	300+	Single screw ships with block coefficients above 0.6							SCN with PCT or CPB or HPP	
Hydrodynamic Partition Plate (HPP)	2 to 4	10	Where serious cross flow exists around stern frame							HPP with PCT or RTF or CPB or SCN or FPHFS	
Fore-Propeller Hydrodynamic Fin Sector (FPHFS)	4 to 6	60+	Placed forward on ducted propellers plus other design applications							FPHFS with PCT or CPB	
Thrust Shaft Bracket (TSB)	4 to 7	100+	Twin screw with shaft brackets							TSB with PCT or CPB	
									Possible Combination of 3 Types of ESD's:		
									SCN with PCT and HPP		
									SCN with CPB and HPP		