

**Engine Room Fire on board the Hong Kong - registered Passenger Jetfoil “FUNCHAL”
Occurred off Western District Public Cargo Working Area at about 0240 hours
on 1st December 2003**

1. The Incident

1.1 At about 0240 on 1 December 2003, a fire broke out in the port engine room of the Hong Kong registered high speed passenger craft Funchal in the position off the Western District Public Cargo Working Area while it was enroute from Hong Kong to Macau. The fire triggered the alarm and was later extinguished by the fixed carbon dioxide smothering system on board. The vessel sustained moderate fire damage to its port engine room while all the 38 passengers and 10 crewmembers on board were not injured.

2. Findings

2.1 The investigation has identified that the most probable cause of the fire on Funchal was attributed to the malfunctioning of the overrunning clutch inside the port N1 turbine engine starter (see fig. 1). Such malfunction might have been caused by the jamming of the tilting pads between the outer and inner races of the clutch. Upon losing of the overrunning function, the starter was continuously driven at an excessive speed by the turbine engine even after the hydraulic circuit was deactivated. The intense heat and excessive starter casing pressure thus generated caused the failure of the hydraulic hose of the reservoir return line, releasing the hydraulic oil and setting off the fire.

2.2 Attributable to the defective engine starter was that there was no specific maintenance or inspection method for the delicate parts of the overrunning clutch assembly.

3. The Lessons

3.1 Important lessons should be learnt from this incident :-

- (i) To avoid reoccurrence of unexpected fouling of the hydraulic engine starter, the ship company is recommended to consult the manufacturer of the engine starter in order to establish appropriate inspection criteria and maintenance requirement on the overrunning clutch, and to incorporate them in the maintenance programme of their jetfoil vessels.



Fig. 1 : Engine starter with the seized splined drive coupling