

CASE NUMBER../ MC99004980 INV INIT/ PORT/ NYCMI LAST UPDATE/ 26APR01  
 CASUALTY TYPE: VESSEL/ X PERSONNEL/ FACILITY/ POLLUTION/ MARPOL/  
 INCIDENT DATE/ 16APR99 TIME/ 0728 KNOWN/ X ESTIMATED/ REF CASE/ MC99002761  
 NOTIFY DATE../ 26APR99 TIME/ 1500 REPORTER TYPE/ INDIVIDUAL  
 SUBJECT...../ EXPRESS II/LOSS OF PROPULSION LOCAL FILE REFERENCE/  
 LOCATION...../ SANDY HOOK BAY LOCAL CODE/  
 INCIDENT STATUS: VERIFIED/ X NOT VERIFIED/ VERIFIED, NOT REPORTABLE/  
 NOTIFY/ ACTION: CTF/ RETURN/ (TO IAPR)

--- VALIDATION AND ENDORSEMENT ---

END/FWD	END/CLS	RETURN	USER-ID	NAME	DATE
INVESTIGATOR:	X			LT	10JUN99
UNIT COMMAND:	X			LCDR	02JUL99
DIST REQ? N :					
HQ REQ? Y :		X			26APR01

--- GENERAL INFORMATION ---

CITY/ ATLANTIC HIGHLANDS ST/ NJ WATERBODY/ NEW YORK HARBOR LOWER BAY  
 RIVER MILE/ . LATITUDE/ N 40-27.5 LONGITUDE/ W 74- 2.0  
 CAS SUMMARY:TYPE/ EQUIP FAIL CLASS/ NONE  
 POSSIBLE DRUG INVOLVEMENT?/ N PUBLIC VESSEL/ BOATING/  
 DEATHS/ MISSING/ INJURED/ TOTAL DAMAGE/ 25000  
 ENV IMPACT: MODE/ SEVERITY CATEGORY/ MATERIAL CATEGORY/  
 OSC/ EPA REGION/ CLEANUP REQ?/  
 RESPONSE BY NSF?/ NSF TIME TO RESPOND/ HOURS  
 NOTIFICATION FROM NRC?../ NRC CASE../  
 NOTIFICATION FROM APHIS?/ N APHIS PORT/

--- INCIDENT BRIEF ---

US passenger vessel suffered a partial loss of propulsion which adversely affected its fitness for service. While underway, the port main engine ceased operation due to a damaged crankshaft. The crankshaft was damaged when a piston rod bearing failed to operate properly. Root Cause: Inherent problem with the type of engine, Deutz PBD604B.

--- ACTIONS REPORTED ---

SEL	CASE SUPPLEMENTS	SEL	EVENT SUPPLEMENTS
1	WITNESS LIST.....(IAWL)/ X	14	COLLISION OR GROUNDING.(MCCG)/ 0
2	COMDT RECOMMENDATION.(MCCR)/ X	15	EQUIP FAILURE.....(MCDR)/ 2
3	CASUALTY DETAILS.....(MCDD)/ X	16	FLOOD,CAPSIZE,SINKING..(MCFC)/ 0
4	NARRATIVE SUPPLEMENT.(MCNS)/	17	FIRE,EXPLOSION.....(MCFE)/ 0
5	PERS ACTION RECOMMEND(MCPA)/ 1	18	HUMAN FACTORS SUPP.....(MCHF)/ 0
6	POLLUTANT DETAILS....(MCPD)/ 0	19	HAZ MAT INVOLVEMENT....(MCHM)/ 0
7	MARPOL DETAIL SUP....(MCMD)/ 0	20	LIFESAVING SUPPLEMENT..(MCLS)/ 0
8	OPERATIONAL CONTROLS (PSOC)/ 0	21	PERSONNEL CASUALTY.....(MCPC)/ 0
9	PERSONNEL INVOLVEMENT(MCPI)/ 1	22	STRUCTURAL FAILURE.....(MCSF)/ 0
10	SMI SUPPLEMENT.....(MCSI)/ 0		
11	TOWING SUPPLEMENT....(MCTS)/ 0		
12	SUBJECT SUPPLEMENT... (MCSS)/		
13	WEATHER FACTORS.....(MCWX)/		

-SUPPLEMENTS-

VESSLS INVOLVED/	1	FLAG	SERVICE	P	M	F	P	P	S	TOW	
VIN	NAME			D	D	R	A	I	I	REF	DMG
D933291	EXPRESS II	US	PASSENGER			X	X				SEA
ENF ACTIONS:	REQ LOU/	REQ SURETY BOND/	NONE/ X								
(ENTER HERE IF ASSOCIATED WITH AN MC CASE, OTHERWISE RECORD IN PSAR)											

FACILITIES INVOLVED/ 0

--- INVESTIGATION RESOURCES UTILIZED ---

CASE NUMBER/ MC99004980

UNIT/ NYCFI

## --- RECOMMENDATION ---

1. BRIEF/ DIESEL ENGINE RISK ANALYSIS ACTION PORT/ GMMI
- In the past 10 years, both vessels operated by Seastreak America (EXPRESS I and EXPRESS II) use Deutz PBD604B main engines and have suffered a total of 7 similar engine casualties. The operating company did not report all engine casualties to the USCG, but 3 of the 7 incidents were documented in MSIS which include MC99002761, MC95003785, and MC95014908. The engine casualties were caused by a piston rod bearing failure. Even though the operating company had instituted a more stringent engine maintenance program than what the manufacturer recommended, similar engine casualties continued to occur. The vessel operating company engineers researched and found that other maritime companies with vessels using the same type of engine encountered similar casualties as well. The engineers also spoke to the engine manufacturer in which they acknowledged a problem with the design of the engine and the only solution presented was to use a different model engine, Deutz TBD620. If there is a design problem with the Deutz PBD604B, then the vessels that utilize this type of main engine and its passengers are put into a potentially hazardous situation. Recommend appropriate personnel from the marine safety center perform a risk assessment of the design of the Deutz PBD604B main engine.

## --- UNIT ENDORSEMENT ---

ENDORSEMENT COMPLETE/ X STATUS/ CLOSED LAST UPDATE/ 02JUL99

Concur with IO. Sufficient evidence exists to warrant a risk assessment from the Marine Safety Center into the design features of the Deutz PBD604B main engine. As noted above, even a more stringent maintenance program than that recommended by the manufacturer has failed to overcome the inherent design defect. ASIO

## --- HEADQUARTERS ENDORSEMENT ---

ENDORSEMENT COMPLETE/ X STATUS/ COMPLETE LAST UPDATE/ 26APR01

We concur with the intent. The Marine Safety Center (MSC) conducts assessment of risks imposed by a failure if it were to occur (i.e. what risks are present when there is the failure of the main engine). The MSC does not, and lacks the necessary expertise to, conduct an evaluation of equipment design to identify the risk of a failure occurring. Therefore, we do not concur with the recommendation that MSC perform a risk assessment of the design of the Deutz PBD604B main engine. However, it does appear that this model of engine has a fundamental design flaw with the engine bearings which have resulted in numerous engine failures. Therefore, this information will be forwarded via the district offices to all Officers in Charge, Marine Inspection (OCMI's) with the recommendation that they take appropriate action for vessels under their responsibility with these engines.

W.D. Rabe  
By direction