ng operations took place during the period of 16 - 19 May the trip to San Diego and San Francisco. A total of 483,000 gallons of DFM and 6997 gallons of 9250 lube oil were received prior to leaving Long Beach. Fueling was again accomplished by Navy Yard Oiler in Oakland during the period of 21 to June. 10,929 gallons of outdated JP-5 were transferred to the diesel fuel tanks, and 16,089 gallons of fresh JP-5 were delivered by Navy Yard Oiler on 21 June. Problems were encountered in obtaining proper hose connections and setting up due to the inexperience of the new personnel handling the job.

On 22 June, 86,507 gallons of DFM were delivered by a Navy Yard Oiler bringing the onboard total to 676,023 gallons.

2. Major or Unusual Engineering Problems

On 11 July 1977, while en route Juneau, Alaska, on all six engines, #6 MDE developed a crack in #5 piston liner. The liner was replaced and the engine was back in operation on 22 July. On 13 July, #1 Auxiliary Boiler was found to have many cracks in the refractory walls and floor. Due to the amount of gases escaping through the cracks, #1 Boiler will be available on an emergency basis only throughout this deployment. Considerable difficulties have arisen in keeping both boilers operating efficiently due to the inadequacy of the instruction manuals supplied for the control system by Carson Controls, and the reluctance of this firm to provide spare parts or technical assistance when needed.

The Boat Handling Crane was found to have extensive grounds in its excitation control circuits on 24 July 1977, impairing both lifting capability and reliability. BURTON ISLAND Electrician's Mates completely rewired the control circuits for the crane and restored it to normal operation on 6 August. The vertical drive on #3 S/S Generator suffered a bearing failure on 31 July. Further damage to the lower half of the vertical drive has placed this engine out of commission for the remainder of the deployment due to unavailability of spare parts.

#1 and #2 S/S Generators both developed liner water jacket cracks, on 4 August and 10 August respectively. The defective liners were changed out in conjunction with 500 hour checks. Cause of the casualties appears to be metal fatigue. On 5 August, a persistant low-speed piston slap in #4 Main Diesel Engine was determined to be caused by premature bearing failure. As the engine was only 70 hours short of a 1500 hour check, the appropriate parts were replaced in conjunction with this overhaul and the engine was restored to service on 13 August. A governor drive