188. The MPA, LT , motioned BT1 to either stay back or to leave the fireroom (p 321).

189. Within a few seconds of entering the fireroom, BT1 heard a loud bang. The people who were looking at the valve 2MS-7 ran past him to the fireroom lower level (p 322).

190. The EOCC major steam leak/rupture in propulsion plant procedures (MMSLR) states ".... personnel should attempt, as time permits, to locate and isolate rupture and secure equipment, including stopping and locking shaft and securing boiler." (p 840, Exhibit 36).

191. Post casualty inspection indicated that the Number 2 Fuel Oil Service Pump (FOSP) had been tripped by fireroom watchstanders (pp 127, 389).

192. Post casualty inspection indicated that watchstanders had attempted to trip both boiler fuel oil quick closing valves and Number 1 FOSP locally. However, mechanical failures of the cable portion of the activating mechanisms apparently prevented the trips from working (p 127).

193. After the casualty, Mr. from NAVSES verified that the fuel oil quick closing valves on the boilers and the quick closing valve for Number 1 FOSP operated by tripping these devices (pp 127, 183).

194. BT1 noted the fireroom rapidly filling with steam and the temperature increasing. He left the fireroom using the ladder for the normal access (p 322).

195. As he was exiting the fireroom, BT1 paused to consider if he would be able to make it out using the normal access because it was becoming extremely hot (p 323).

196. As he was exiting, BT1 noted another individual a distance behind him attempting to exit the fireroom (p 323).

197. BT1 continued out the normal access, opened the Ellison door at the fireroom entrance and escaped safely to the forward mess deck area. He was not injured (pp 323, 325).

CASUALTY CONTROL

198. BT1 , who was in the B-Division berthing compartment, heard a rumbling sound and went to the second deck. BT1 , who was covered in white dust, told him, "the turbo stop blew." (p 357).

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199. BT1 , using the remote operators on the mess decks, shut the auxiliary and main steam stop valves on Number 1 and Number 2 boilers (p 357).

200. BT1 attempted to enter the fireroom Ellison door to pull the emergency trips for both fuel oil service pumps but was unable to do so because of the heat (p 357).

201. Electrical power had not yet been lost when BT1 , shut the boiler stop valves (p 373).

202. BT1 noted that only one of the main and auxiliary steam stop valves indicated shut from the remote station at the time he moved toward the Ellison door (p 357).

203. Valve 2MS-1, the main steam stop for Number 2 boiler, did not shut when operated remotely because the air supply line to the motor had been severed when valve 2MS-7 failed (pp 361, 391).

204. Because valve 2MS-1 could not be shut remotely, the steam leak could not be isolated from Number 2 boiler (Exhibit 84).

205. After ensuring that the throttles were opened, the Engineer Officer proceeded from main control to the mess decks to take charge at the scene (pp 325, 823, 1073, 1093).

206. The situation on the mess decks was confused and disorganized when the Engineer Officer arrived. He took charge and organized the casualty control efforts (pp 325, 828, 1035, 1039, 1040, 1073).

207. Upon arriving on the mess decks, the Engineer Officer observed BTFA Brooks injured and laying on the deck. LCDR administered first aid (p 823).

208. After administering first aid to BTFA , LCDR heard EM2 in pain. He helped the injured man to the deck and administered first aid (p 823).

209. MM3 saw LT exit the fireroom injured, laid him on the deck, and administered first aid until relieved by medical personnel (p 1033).

210. The Engineer Officer ordered positive ventilation set in the engineroom and the four doors to the mess decks shut. This action was taken in an effort to establish air flow into the fireroom to clear the steam and to cool the space (p 823).

211. One investigator, MM3 , donned an OBA and attempted to enter the fireroom through the escape trunk Ellison door on the lower level. He was prevented from entering because of heat in the fireroom (p 1034).

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212. MM3 and MM3 reported to the Repair 5 Locker Leader that the fireroom was too hot to enter and requested permission to don firefighting ensembles so that they could enter the space and search for survivors (p 1033).

213. The Engineer Officer instructed the MM3 and MM3 to assist anyone in the fireroom who required assistance; otherwise, to identify those still in the space (pp 824, 1034).

214. Approximately 15 to 25 minutes after general quarters was sounded, the two investigators entered the fireroom through the normal access (pp 291, 824, 1034, 1073).

215. Upon entering, the investigators noted that the fireroom was covered with a white powder, apparently from steam pipe insulation (p 1035).

216. MM3 stated that while in the fireroom, the firefighting ensembles were steaming, the OBA face pieces felt as though they were melting, and that they "had just gone into the hottest sauna in the world" (P 1036).

217. The investigators found MM3 on the upper level in the vicinity of 1SA switchboard. He appeared to be dead (pp 296, 1035, Exhibit 74).

218. The investigators found MM3 on the upper level near a workbench. He appeared to be dead (pp 293, 1035, Exhibit 74).

219. The investigators found three bodies piled on top of each other in the vicinity of Number 1 main feed booster pump in the fireroom lower level. They were identified as BT2 FN and BT1 . All appeared to be dead (pp 294, 1036, 1037, 1038, Exhibit 74).

220. Prior to the casualty, two deck plates had been lifted or moved to change oil in Number 1 main feed booster pump (pp 366, 825, 1048, Exhibits 74 and 121 (picture 18)).

221. It appeared that BT2 had fallen through the open deck plates (pp 295, 306, 825, 1038, 1058).

222. The investigators found BT3 in front of Number 2 boiler on the lower level. He appeared to be dead (pp 293, 1037, 1038, Exhibit 74).

223. After about five minutes in the fireroom, the two investigators were required to leave because of the heat (pp 1036, 1038).

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224. A second team of investigators entered the fireroom to check for damage and to verify the ventilation system (pp 291, 1040).

225. One of the investigators went behind Number 2 boiler and noted the bonnet of valve 2MS-7 to be missing (p 292).

226. The second team of investigators exited the fireroom after five to seven minutes and reported to the Engineer Officer (pp 293, 823).

227. Exhaust ventilation was started on high speed in the fireroom which quickly cleared the steam and heat; allowing entry into the fireroom without an OBA (p 823).

228. After the fireroom atmosphere was cleared the bodies were removed from the space (p 824).

229. The Engineer Officer found the bonnet to valve 2MS-7 lying on a deck plate on the lower level behind the boilers (p 826).

230. The Engineer Officer noticed a gold colored material imbedded in the threads of the bolts and studs for valve 2MS-7 (p 826).

231. The Engineer Officer determined and reported to the Commanding Officer that the propulsion plant could not be started to provide propulsion for the ship's return to port (p 826).

PERSONNEL CASUALTIES - MEDICAL

232. Five personnel in the fireroom when the steam leak occurred were able to exit the space. The individuals were BT1 [redacted], BT2 F. R. Parker, Jr., BTFA T. M. Brooks, LT J. M. Snyder, and EM2 D. Lupatsky (pp 289, 322, 359).

233. BT1 [redacted] exited the fireroom to the mess decks via the normal access (p 324).

234. BT1 [redacted] felt a searing pain on the side of [redacted] and in his [redacted] but did not require medical attention (p 325).

235. BT2 F. R. Parker Jr., exited the fireroom via the escape trunk to the forward mess decks and walked to medical (pp 58, 568, 825, 1029).

236. BTFA T. M. Brooks exited the fireroom to the mess decks via the normal access where he received first aid (pp 324, 823, 1030).

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237. LT J. M. Snyder exited the fireroom to the mess decks via the normal access where he received first aid (pp 569, 1030, 1033).

238. LT Snyder, although critically injured, expressed concern for personnel still in the fireroom and instructed those attending him that others needed help (p 569).

239. EM2 D. Lupatsky exited the fireroom to the mess decks via the normal access where he received first aid (pp 823, 1030).

240. After receiving first aid on the mess decks; LT Snyder, BTFA Brooks and EM2 Lupatsky were transported to IWO JIMA's medical facilities for treatment (pp 58, 825).

241. All four injured personnel had arrived in medical aboard IWO JIMA by 0900 (pp 58, 825).

242. In the Medical Department aboard IWO JIMA, teams were designated to care for each patient (p 59).

243. Each of the four patients were initially diagnosed as suffering from severe over more than of their bodies and probable (p 58).

244. Initial medical treatment included

or . Because of respiratory injury, each patient was to assist their breathing (pp 59, 998).

245. In the opinion of Captain , MC, USN, and Captain , MC, USN; the patients had virtually no chance of surviving (pp 61, 62, 996).

246. Additional medical procedures were taken to prepare the patients for transfer to USNS COMFORT, a hospital ship with a burn unit (p 59).

247. The decision to transport the four patients to USNS COMFORT was made by Captain , MC, USN; the Senior Medical Officer aboard USS IWO JIMA (pp 55, 59).

248. A CH53 helicopter was used to transport the patients to USNS COMFORT because it permitted an anesthetist, a surgeon, and two corpsmen to accompany each patient (p 60).

249. The decision to use a CH53 helicopter resulted in an approximate 20 minute delay in transporting the four patients to USNS COMFORT (p 68).

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250. In the opinion of Captain , the advantages of using a CH53 helicopter to transport the patients outweighed the attendant delay, and, in his opinion, the delay had no bearing on the ultimate outcome (p 69).

251. After reviewing the medial treatment afforded the four patients, Captain MC, USN, concurred with the decision to delay transport to use a CH53 (p 999).

252. The four patients with attending medical personnel departed USS IWO JIMA for USNS COMFORT at 1037 (Exhibit 20).

253. On board USNS COMFORT, each patient was assigned to a surgical team (p 999, Exhibit 3 through 18).

254. On board USNS COMFORT, an escharotomy was performed on each of the patients to increase blood circulation (pp 67, 999, Exhibits 3, 4, 5, and 6).

255. Fasciatomies were performed on some of the patients to increase the blood supply to injured muscles (pp 67, 1000, Exhibits 3, 4, 5, and 6).

256. On board USNS COMFORT, numerous other medical procedures were conducted in an attempt to save the patients' lives (p 1001, Exhibit 3 through 18).

257. Because of operation Desert Shield, the Medical Department aboard USS IWO JIMA was augmented with a significant number of medical personnel who would not normally have been on board. For the same reason, two hospital ships were in the area (p 70).

258. In the opinion of Captain , the four patients could not have received better medical care (p 1001).

259. LT J. M. Snyder expired on board USNS COMFORT at 1830 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

260. BT2 F. R. Parker, Jr. expired on board USNS COMFORT at 2308 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

261. EM2 D. Lupatsky expired on board USNS COMFORT at 2308 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

262. BTFA T. M. Brooks expired on board USNS COMFORT at 2330 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

263. Six personnel in the fireroom when the steam leak occurred were not able to exit the space. They were BT1 R. L. Volden, MM3 J. A. Smith, Jr., FN D. C. McKinsey, MM3 M. N. Manns, Jr., BT2 M. E. Hutchinson, and BT3 D. A. Gilliland (pp 1035, 1036, 1037).

264. BT3 D. A. Gilliland was pronounced dead on board USS IWO JIMA (LPH 2) at 0925 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

265. MM3 M. N. Manns, Jr. was pronounced dead on board USS IWO JIMA (LPH 2) at 0929 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

266. MM3 J. A. Smith was pronounced dead on board USS IWO JIMA (LPH 2) at 0931 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

267. BT1 R. L. Volden was pronounced dead on board USS IWO JIMA (LPH 2) at 0944 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

268. FN D. C. McKinsey was pronounced dead on board USS IWO JIMA (LPH 2) at 0955 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

269. BT2 M. E. Hutchinson was pronounced dead on board USS IWO JIMA (LPH 2) at 0959 on 30 October 1990. Cause of death was thermal injuries (Exhibit 176).

SHIP CONTROL

270. The Officer of the Deck (OOD) when the casualty occurred was LTJG , USNR (p 219).

271. LTJG MacKenzie had been qualified OOD for one week (p 231).

272. The Commanding Officer was on the Bridge from before the ship got underway until after the ship was anchored (p 794).

273. A navigation brief for leaving Bahrain was conducted during the afternoon of 29 October 1990 (p 219, Exhibit 33).

274. USS IWO JIMA was in restricted waters with the Special Sea and Anchor Detail set and the Restricted Maneuvering Policy in effect when the casualty occurred (pp 219, 221, 794, Exhibits 21, 138).

275. USS IWO JIMA was underway from Bahrain at about 0756 on 30 October 1990 (pp 221, 793, Exhibits 20, 39, 138).

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276. The ship got underway with a pilot and two tugs (p 793 Exhibit 20).

277. Both tugs were released by 0802. The pilot remained on board (p 793 Exhibit 20).

278. At about 0811, the Engineer Officer notified the OOD of a steam leak in the fireroom and requested permission to secure Number 2 boiler. The OOD immediately granted permission to secure the boiler (pp 221, 794).

279. At about 0812, the OOD sounded general quarters as requested by the Engineer Officer. Included with the request was a report that a major steam leak had occurred and that communications were lost with the fireroom (pp 222, 794, Exhibit 20).

280. As a result of the engineering casualty, propulsion and electrical power, including power to steering, were lost (pp 224, 794).

281. Power to steering was lost for about one minute from about 0813 until 0814 (Exhibit 20).

282. When the casualty occurred, the ship's speed through the water was about eight or nine knots (p 794).

283. The Commanding Officer and the OOD felt the ship had to slow to between four and five knots to safely drop an anchor (pp 224, 794).

284. The Commanding Officer (CO) disagreed with the pilot's recommendation to drop the anchor because in the opinion of the CO, the ship had too much way on (p 794).

285. The Commanding Officer delayed dropping the anchor as long as possible to preclude injuring personnel on the forecastle (pp 224, 794).

286. The port anchor was let go at 0816 and the starboard anchor was let go at 0817 (p 225, Exhibit 20).

287. The ship safely anchored 200 yards from the nearest shoal water (p 226).

288. The Commanding Officer did not find it necessary to take the deck or the conn (pp 225, 231).

DAMAGE

289. Inspection of the boilers following the casualty indicated only a small amount of water remained in the boilers (p 180).

290. The deaerating feed tank had about a bucket of water remaining after the casualty (p 184).

291. The burner barrels on Number 2 boiler could not be pulled out because of corrosion which formed as a result of condensation following the major steam leak (p 179).

292. After the casualty, there was no visible damage to the tubes in Numbers 1 and 2 boilers or to the refractory, other than normal wear (p 179).

293. Mr. , the NAVSES boiler inspector who inspected both boilers after the casualty occurred, was surprised with the minimal amount of damage that occurred to the boiler as a result of the failure of 2MS-7 (p 179, Exhibit 129).

294. Mr. stated that significant damage to the ship might have occurred had the boiler fires not been extinguished quickly (p 185).

295. A 100 percent hydrostatic test of both boilers is required to confirm tube tightness (p 179).

296. Mr. stated that the overall condition of valve 2MS-7 following the casualty was good (p 162).

297. The air supply line to the pneumatic motor for valve 2MS-1 was severed (pp 361, 392).

298. The conduit pipes, containing the cables which connected the fuel oil quick closing valves on the boilers with the two pull handles at the BTOW station, had been broken free from their supports (pp 127, 389, Exhibit 121 (picture 17)).

299. Thermal insulation on pipes in the vicinity of 2MS-7 had been blown off the pipes (Exhibit 121 (pictures 2 thru 7, 14, 20, 39, 40)).

300. After the casualty, COMNAVSURFLANT provided replacement valves for 1MS-7, 2MS-7 and MS-9 (pp 148, 149, Exhibits 123, 124).

301. No evidence was presented that suggested that any intentional or criminal actions by any service member, living or deceased, directly or indirectly caused the accident aboard USS IWO JIMA (pp 163, 477, Exhibits 175, 186, 187, 188).

ELLISON DOOR/ESCAPE TRUNK

302. The fireroom escape trunk Ellison door did not operate correctly because, when pushed to its full open position, the door remained open (p 388).

303. The escape trunk had little of the white powder in it that was prevalent throughout the fireroom after the casualty (p 388).

ADMIN - RESPONSIBILITY

304. The Commanding Officer is the officer assigned by CHNAVPERS, who is responsible for safe and proper supervision, operation and maintenance of the propulsion plant. The Commanding Officer's authority and responsibility are established by U.S. Navy Regulations (p 791 Exhibit 160).

305. All personnel on watch in the fireroom at the time of the casualty were qualified for the watch station they were standing (p 102, Exhibit 156, 109 thru 117).

306. Some training had been conducted in major steam leak casualty control procedures. Specifically basic engineering casualty control exercises for this casualty were conducted on 14 June and 23 August 1990 (Exhibits 154, 155).

307. The selected exercise requirement to conduct a major steam leak drill had not yet been conducted for this competitive cycle (Exhibit 51).

308. The Restricted Maneuvering Policy set forth in Exhibits 35 and 37 did not "unambiguously set forth....the end of a 'Restricted Maneuvering Condition'" contrary to the requirements of COMNAVSURFLANTINST 3540.18A (Exhibit 160).

309. The Engineering Department watchbill was not prepared, approved and administered in accordance with the requirements of the Engineering Department Organization and Regulations Manual (pp 262, 266, 371, Exhibits 22, 25, 160).

310. Not all watch stations required to be manned for Sea Detail were included on the Engineering Department watchbill (Exhibits 22, 160).

311. The tag-out posted for the repair of valve 2MS-7 did not adequately isolate the work area (Exhibit 139).

312. No tag-out was posted for the hydrostatic test of Number 1 boiler or for a hydrostatic test of valve 2MS-7 (pp 631, 671, 941, 985, Exhibit 139).

313. BTC stated that the by-pass valve for 1MS-1 was opened with a danger tag attached to hydro valve 2MS-7 (pp 941, 942, 984, Exhibit 139).

314. The bonnet on the by-pass for valve 1MS-1 was removed from the valve at about 0030 on 29 October, without first clearing a danger tag (p 1109, Exhibits 38, 139).

315. BT3 stated he tagged-out Number 1 Main Feed Booster Pump (MFBP) to change oil (p 1075).

316. No tag-out record sheet for changing oil in Number 1 MFBP could be located; nor could the Duty Officers, MMCS and LTJG , recall approving a tag-out for the work (p 1075).

317. ENS G. J. USN, relieved as B. Division Officer on 22 October 1990. There was no formal turnover process nor was there a relieving letter (p 696).

318. ENS had been the Electrical Officer on USS IWO JIMA for ten months and had done very well in this billet (pp 696, 798).

319. ENS had been identified as a "gifted officer" with exceptional engineering knowledge. He was assigned to B-Division because the previous division officer was not doing well (pp 696, 697, 798, 799).

320. BTC was relieved of his duties as B-Division Leading Chief Petty Officer on 24 Aug 90, reportedly because of clashes with the Engineer Officer and/or Division Officer (pp 721, 728, 798, 799).

321. BTC was reassigned as B-Division Leading Chief Petty Officer in mid-October 1990, along with the assignment of a new division officer, because of problems in the division (p 799, Exhibit 187).

322. BTC reported aboard USS IWO JIMA on 7 April 1983 (p 933).

323. BTC will be separated from the Navy because he does not meet the requirements for (p 785).

324. In the opinion of the Commanding Officer, Captain , previous Commanding Officers did not take action on BTC because of the Chief's value to the ship (p 785).

325. Captain expressed total trust and confidence in BTC y (p 785).

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326. Although BTC [redacted] was not the B-Division LCPO between 24 Aug 90 and mid-October, he continued to be involved in the day-to-day operation of the division and in decision making processes (pp 637, 721, 728).

327. The Engineer Officer stated that BTC [redacted] s management style gave his subordinates the impression they were not trusted (p 847).

328. Concerning BTC [redacted], ENS [redacted] stated: "During his time when he was back in the division, he was again the center of the division. Everything revolved around him, he did all the coordination, answered all the questions." (p 721).

329. ENS [redacted] stated that BTC [redacted] was not accustomed to having a division officer check on him (p 745).

330. LT Snyder relieved LT [redacted] on 18 Oct 90 as Main Propulsion Assistant. This was a normal rotation relief (p 799, Exhibit 51).

331. Although the Number 1 SSTG watchstander was assigned to a different watch because of heat stress symptoms, no heat stress survey of the area was ordered or conducted (p 1088).

332. The Commanding Officer stated that he did not consider the recent personnel changes in B-Division to have contributed to the cause of the accident (p 799).

333. Engineering Department personnel were divided into three inport duty sections (pp 722, 723).

334. Each day, a "stand-by duty section" assisted the day's duty section (pp 722, 723).

335. The duty section and stand-by duty section normally worked a 16 to 18 hour day. The third section "knocked off" after morning quarters (pp 722, 723).

336. The Engineer Officer stated that Engineering Department personnel had adequate rest during the inport period (p 846).

337. The Commanding Officer stated that he was confident that the Engineer Officer had made sure that his personnel were getting adequate rest (p 797).

338. In the opinion of ENS [redacted], the B-Division Officer, personnel in the division received adequate sleep and liberty. Fatigue did not contribute to the cause of the casualty (p 744).

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339. LCDR V reported to USS IWO JIMA on 5 April 1989 and assumed duties as Engineer Officer. The previous Engineer Officer had been relieved for cause and was not on board when LCDR arrived (pp 804, 829, Exhibit 167).

340. The material condition of the propulsion plant when LCDR assumed duties as Engineer Officer was poor (pp 681, 802, 834, 835, 934).

341. Since LCDR became Engineer Officer, the material condition of the propulsion plant improved significantly as evidenced by an Operational Propulsion Plant examination completed in April 1990 (pp 681, 682, 803, 934, Exhibits 165, 167).

342. In the opinion of the Commanding Officer, LCDR "....is the best thing that has happened to [USS IWO JIMA] in the last five years," and LCDR V should continue as Engineer Officer (p 803).

343. Prior to the accident, manning levels in B-Division were sufficient and met NMP requirements (p 744).

344. The B-Division Supply Petty Officer had been assigned to this position for about three months but had received no training on how to carry out his duties and responsibilities (pp 688, 689).

345. The B-Division Supply Petty Officer had only a basic knowledge of procedures for ordering parts, supplies, and handling requirements (p 685).

BOILER HYDRO

346. A 100 percent hydrostatic test of Number 1 boiler was conducted between 1520, 28 Oct and 0330, 29 Oct (pp 307, 318, 319).

347. The temperature of the water used to hydrostatically test Number 1 boiler was 78 degrees F (p 957).

348. Two one-half inch globe socket welded cut-out valves for the steam drum pressure transmitter were replaced (p 745, Exhibit 150).

349. Following replacement of the steam drum pressure transmitter cut-out valves, a 135 percent hydrostatic test of the weld was required. Only a 100 percent hydro was conducted (p 745, Exhibit 161).

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350. Neither a locally prepared procedure nor NSTM Chapter 221 were used in the fireroom when Number 1 boiler was hydrostatically tested (pp 980, 981).

351. BTC , the individual who supervised the hydrostatic test, was not familiar with the NSTM, Chapter 221 requirements for providing over-pressure protection (p 982, Exhibit 161).

352. LT and LT were designated to witness the hydrostatic test of Number 1 boiler however, neither officer checked the boiler drum pilot valve flange which had just been repaired (p 671).

QUALITY ASSURANCE

353. COMSERVFORSIXTHFLTINST 4700.2B cautions ships on foreign contractor work in paragraph 106.c.(5) that: "Ships representatives should closely monitor all work being accomplished and immediately contact the SRU surveyor if problems arise.... It is important to remember that a foreign contractor will very likely not be familiar with the particular make or model of the equipment that he will be repairing on board U.S. ships...." (pp 137, 402, Exhibit 79).

354. The QA caution in paragraph 106.c.(5) of COMSERVFORSIXTHFLTINST 4700.2B does not appear in any form within the body of the Ship Repair Contracting Manual (NAVSEA 0900-LP-079-5010) or the Master Agreement for Repair and Alteration of Vessels with BASREC (N68171-85-H-0031) (p 402, Exhibits 79, 140).

355. LCDR as OIC for SRU Detachment Bahrain testified that the ship had the ultimate responsibility for all QA on the ship (p 877).

356. The SRU Surveyor (Mr. , was under the impression that ship's force was responsible for QA of BASREC work (p 929, Exhibit 175).

357. The SRU surveyor (Mr. was under the impression that BASREC was supposed to have a QA inspector on-site during the repair process (Exhibit 188).

358. SRU Detachment personnel stated that the surveyor is responsible for ensuring job completion in accordance with the specification, which is not the same as quality assurance (pp 410, 929).

359. The COMSERVFORSIXTHFLT Maintenance Officer stated that quality assurance requirements in repair work accomplishment is a shared responsibility between ship's force and the SRU surveyor (pp 438, 443, 444).

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360. To BASREC personnel, the surveyor is primarily responsible for checking the adequacy of work conducted. Different surveyors will check to the work specifications imposed - U.S. Navy, Lloyds, American Bureau, etc. (p 593).

361. The COMSERVFORSIXTHFLT Maintenance Officer testified that surveyors should have a working familiarity with NAVSEA quality assurance requirements (p 456).

362. There is no separate quality assurance organization within the SRU Detachment Bahrain (pp 422, 423, 532, 872, Exhibit 143).

363. QA training as practiced in the U.S. Navy, has no counterpart at BASREC. All QA training on processes is done on the job by the skilled foreman (p 590).

364. The four work specifications written for USS IWO JIMA did not include NAVSEA Standard Items or other technical documentation references on which to base repair procedures (pp 522, 922, Exhibits 130, 145).

365. The 2MS-7 work specification was not identified as a Level I repair. The references at a minimum should have listed NAVSEA Standard Items and MIL-STD-777 (pp 190, 203, Exhibits 130, 132).

366. NAVSEA S9AA0-AB-GOS-010/GSO, General Specifications for Overhaul of Surface Ships (GSO) shall be invoked by all activities involved in defining the technical requirements for modernization and repair of non-nuclear ships. It is the primary source of technical requirements for the refurbishment and repair of existing ship's equipment and components (Exhibit 80).

367. GSO defines a "Technical Repair Standard" (NAVSEAINST 6160.2) as a technical document which provides the minimum requirements and procedures for the overhaul of an item to a specified condition. The TRS is a standard, not simply a procedure or a substitute for a technical or maintenance manual (Exhibit 80).

368. There were no special material or repair control requirements listed on the four USS IWO JIMA repair specifications written by SRU Detachment Bahrain surveyors (Exhibits 130, 145).

369. SRU Detachment Bahrain has contracted locally for Level I work. The contractor used was BASREC (pp 414, 456, 457, 508, 538, 772, 898, 899).

370. On Level I repair taskings that require material, the material is normally provided by the ship. SRU Detachment Bahrain does not stock Level I material (p 524).

371. The OIC, SRU Detachment Bahrain testified that he discussed the 2MS-7 valve with SRU Naples on 28 October 1990. At that time he concluded that he had a Level III valve installed in a Level I system (pp 886, 887, 912).

372. The SRU surveyors are sent to conduct ship checks in an effort to develop accurate work specifications (pp 433, 439, 530).

373. The ship surveyor conducts in-progress work surveillance to ensure adherence to specification requirements, orders, directives and sound marine practices. He is responsible for final acceptance of all work performed by foreign contractors (Exhibit 143).

374. It is not uncommon for the surveyor to execute corrections and changes to the specification at the work site or to include those changes in a completion report afterwards (pp 429, 451, 883, 884).

375. The Surveyor Supervisor, Mr. , stated that there are no requirements to document the results of check points in a work specification. Satisfactory completion of the repair job, signed by the surveyor, will signify that all checks were done correctly (pp 532, 533).

376. The OIC, SRU Detachment Bahrain stated that repair specifications were kept simple because of worker language barriers and because the contractor would not have copies of the specification reference documentation (p 879).

377. No SRU personnel involved in the generation of the 2MS-7 work specification or SRU/BASREC personnel involved in the actual work accomplishment equated main steam with Level I (pp 412, 433, 507, 520, Exhibits 130, 145).

378. Prior to calling a job complete, the surveyor must inspect the completed product and should contact ship's force for concurrence. The surveyor should then sign off the job as complete (pp 409, 454, 534, 546, Exhibit 143).

379. NAVSEA S9253-AD-MMM-010 to 140 (Maintenance Manual for Valves, Traps, and Orifices (non-nuclear)) provides detailed repair guidance on valves found on U.S. Navy ships (Exhibit 81).

380. NAVSEA S9253-AD-MMM-010 Paragraph 6-3.2.1 defines Level I maintenance and components as, "Systems designated as Level I include main steam systems with a design temperature greater than 775 degrees F and/or that operate at a pressure higher than 1000 psi. Valves used in Level I systems and/or designated as Level I valves must meet contain controlled material requirements...." (Exhibit 81).

381. The procedures required to spot-in a gate valve can be found in NAVSEA S9253-AD-MMM-010 Paragraph 6-7.1.2. The procedure requires the removal of the stem from the bonnet (Exhibit 122).

382. The COSAL listing under the APL for valve 2MS-7 contains a warning which reads "Level III valve, do not install in Level I/Sub Safe service. When valve is no longer repairable order FSN...." (Exhibit 123).

383. During 2MS-7 disassembly and reassembly there were no liquid penetrant or blue checks accomplished on the seating surfaces. During repairs to the 2MS-7 bypass valve, the seat was blued for contact. No documentation could be provided for any of the QA tests (pp 98, 473, 476, 928, Exhibit 132).

384. During the reassembly of 2MS-7, a new soft iron gasket was not installed. The old gasket, which was imbedded in one side of the valve body to bonnet grove, was reused. The condition of the old gasket was not inspected (pp 170, 473, 928, Exhibits 127, 130).

385. The brass nuts removed from the parts bin in the fireroom are visually not distinguishable as brass because of the manufacturer-applied black coating on them (Exhibits 141, 186).

386. COMNAVSEASYSCOM has been aware of a problem with coated brass nuts being used in high temperature applications since 1975. An advisory was issued in warning to all steam propulsion plant ships and an ACN change made to NSTM Chapter 075 (Threaded Fasteners) (Exhibits 162, 163).

387. NSTM Chapter 075 ACN on threaded fasteners states in part, "....there are some copper alloy fasteners in the stock system that are treated with carbon black and look very much like steel. These fasteners may or may not be marked and must not be used in high temperature applications (above 250 degrees F). The Level I system of material control should be adequate to protect main and auxiliary steam systems from using these fasteners, however, make sure of the marking before installing fasteners in high temperature applications and do not rely on looks or what the stock system sends you...." (Exhibit 163).

388. Appropriate fastener material for use in main steam systems can be identified by consulting technical documents available on USS IWO JIMA and at SRU Detachment Bahrain (Exhibits 80, 81, 135, 136, 163).

389. The COMPHIBGRU 2 Material Officer interpreted COMNAVSURFLANTINST 9090.1 as applicable for ship's force work, COMNAVSURFLANTINST 9090.2 as applicable for Intermediate Maintenance Activity (IMA) work, COMNAVSURFLANTINST 9000.1C as applicable for depot level work during availabilities over three months in duration. He is not aware of any instruction that discusses quality assurance for short duration depot level work or availabilities (p 119).

390. CINCLANTFLTINST 5400.2L Article 4403 Paragraph C.(2) states that the Commanding Officer shall "Recognize that they share an equal responsibility with the industrial activity for quality assurance of work accomplished to.... establish a quality assurance organization.... to determine that work by the industrial activity is properly performed in accordance with established technical specifications...." (Exhibit 76).

391. COMNAVSURFLANTINST 9000.1C Article 4711.2 Paragraph 1 states, "Overseas availabilities are assigned for ship repairs requiring industrial assistance from repair facilities remote from those normally used by Atlantic Fleet ships, and which are essential to permit the ship to continue its assignment in a high state of readiness...." (Exhibit 78).

392. COMNAVSURFLANTINST 9000.1C Article 4711.2 Paragraph 1.a. states, "In planning work, consideration need not be limited to the correction of CASREPs; requests are also appropriate for emergent work items. Specifically, items which do not require repair parts (foreign industrial activities will probably not be able to undertake such work unless the ship has the parts)...." (Exhibit 78).

393. The COMNAVSURFLANTINST 9090.1 of 26 December 1978 sets force policy on quality assurance (QA) programs. It references CINCLANTFLTINST 4355.1A/CINCPACFLTINST 4355.1 which has been cancelled (pp 92, 118, Exhibit 82).

394. COMNAVSURFLANTINST 9090.1 Paragraph 2.2 states, "This manual....quality assurance requirements for the repair and maintenance of ships and their equipment by forces afloat. This includes, but is not limited to Level I, Level A...." (Exhibit 82).

395. COMNAVSURFLANTINST 9090.1 Paragraph 2.2.3 states, "The instructions contained herein have applicability to <u>every ship and activity</u> of the force. It is primarily applicable to the repair/maintenance accomplished by force Intermediate Maintenance Activities (IMA). The requirements are also applicable to ship's force when performing maintenance on their own ship...." (Exhibit 82).

396. COMNAVSURFLANTINST 9090.1 paragraph 2.2.4 states, "Because of the wide range of ship types and equipment, and the various resources available for maintenance and repair, the instructions set forth in this manual are necessarily somewhat general in nature. Each activity must implement a quality assurance program to meet the intent of this manual...." (Exhibit 82).

397. USS IWO JIMA promulgated a ship's quality assurance instruction by IWOJIMAINST 9090.2C of 23 July 1989. The reference instruction is COMNAVSURFLANTINST 9090.2 which is the TYCOM QA Manual for Intermediate Maintenance Activities (Exhibit 83).

398. Although USS IWO JIMA has a promulgated quality assurance instruction, it is not being used by the Engineering Department (p 831, Exhibit 83).

399. COMNAVSURFLANTINST 9090.1 Paragraph 2.5 states, "Audits are the tool which will be used to measure the success of this program....Squadron/Groups shall conduct annual audits of all assigned ships as part of the command inspection to ensure compliance with this program...." (Exhibit 82).

400. The USS IWO JIMA has not had a QA program audit by her Squadron/Goup Commander during the last year and a half. No records can be found of any previous audit (p 1057).

401. COMNAVSURFLANTINST 9090.1 Section 4 defines levels of essentiality which includes Level I control systems. Surface ship Level I designation shall apply to piping/components in the main steam systems with a design temperature of 775 degrees F or greater on fossil fuel powered systems. It further states that the boundaries of main steam are defined as originating at the superheater outlet header connection (flanged or butt welded) and terminates at all high pressure turbine inlet connections and shall include all piping and components including main steam drains up to and including the outlet stop valve and/or steam pressure sensing lines (p 134, Exhibit 82).

402. Valves 1MS-1, 2MS-1, 1MS-7, 2MS-7, MS-8 are Level I valves by application as is the piping connecting the valves, drains and bypass valves (p 93, Exhibits 82, 84).

403. COMNAVSURFLANTINST 9090.1 Section 6 Paragraph 6.4.3 states, "The Engineer of a ship shall ensure that controlled material requirements are indicated on work requests where a determination has been made regarding the requirements of Level I,.... or other controlled material, i.e. MILSPEC...." (pp 435, 659, Exhibit 82).

404. COMNAVSURFLANTINST 3540.18A (EDORM) Paragraph 1107.e states, "Engineer Officer responsibilities - establish an organization of qualified personnel to monitor progress and

inspect work performed on Engineering Department equipment by commercial contractors, Intermediate Maintenance Activities (IMA) and Depot Level Repair Activities, and to witness quality control tests as appropriate to assure prompt and correct work completion." (Exhibit 160).

405. COMNAVSURFLANTINST 9090.1 Section 7 Paragraph 7.5.4 states, "All in-place testing of ship systems and components will be performed by qualified ship personnel. All valve lineups, electrical hookups, system lineups and operations necessary to meet testing requirements and perform tests or inspections shall be completed by the ship...." (Exhibit 82).

406. COMNAVSURFLANTINST 9090.1 Section 7 requires ship's force personnel to document hydrostatic tests accomplished on piping systems or portions of a system to recertify the system after maintenance/repair actions have been accomplished. QA Form 18A is to be used and records maintained for 3 years (Exhibit 82).

407. The USS IWO JIMA's quality assurance instruction does not require the use of QA Form 18A when conducting hydrostatic tests of piping systems/components (p 638, Exhibit 83).

408. The USS IWO JIMA Engineer Officer delegated all testing requirements (including hydrostatic) during 25 - 30 October to the MPA, BTC , and BT1 (LPO of the space). He did, however, accomplish the boiler close-out inspections (p 842, Exhibit 186).

409. The Engineer Officer was aware that USS IWO JIMA had a QA instruction promulgated and that he was the Quality Assurance Coordinator (pp 657, 829).

410. The Engineering Department had a QA organization established by the Engineer Officer when he arrived. It deteriorated over time due to a lack of attention (pp 657, 830).

411. Following the USS IWO JIMA's 1989 deployment, the Engineer Officer attempted to obtain quotas for some of his personnel at various NEC QA courses. He was told the training was for enroute or attached Intermediate Maintenance Activity (IMA) personnel only (pp 831, 951).

412. Intermediate Maintenance Activities have trained QA personnel who monitor and administer controlled material programs (includes Level I). Special NEC training is providing these personnel which is not available to non-IMA personnel (pp 446, 447, Exhibit 82).

413. The Engineer Officer on USS IWO JIMA was under the impression that the SRU surveyor was responsible for the QA of all work specification check points (p 832).

414. Senior B Division personnel (BT1 [redacted] and BT1 [redacted]) stated they were under the impression that the SRU surveyor was responsible for QA of the BASREC work (pp 360, 607, 608).

415. The Engineer Officer on USS IWO JIMA had received QA training as an enlisted man in the submarine force where there was a separate QA organization for shipboard work. He stated he does not see a comparative organization in the surface force outside of the Intermediate Maintenance Activities (pp 828, 857).

416. Prior to entering any port for maintenance, the Engineer Officer on USS IWO JIMA would meet with his division officers (or representatives) and discuss the upcoming work requirements, including QA. This was done prior to the inport period starting 25 October 1990 (pp 670, 829).

417. The Engineer Officer on USS IWO JIMA was under the impression that the contractor knew how to work Level I jobs, that the SRU surveyor was familiar with Level I procedures in steam systems and that the work specification called for Level I controls (pp 657, 834).

418. The Engineer Officer on USS IWO JIMA stated that he required his personnel to monitor all work ongoing in the engineering plant regardless of the repairing activity (pp 657, 827).

419. The Engineer Officer of USS IWO JIMA did stress to his personnel the use of correct fasteners for application intended (p 378).

420. Senior personnel in the USS IWO JIMA Engineering Department knew that they must supervise junior personnel in the accomplishment of valve maintenance so as to prevent the use of unauthorized material while training them in proper repair procedures (pp 303, 364, 632, 965, 966, Exhibit 186).

421. Enlisted personnel in B Division stated they were unaware of the existance of a USS IWO JIMA QA instruction but several did know that the COMNAVSURFLANTINST 9090.1 (orange binder) was available for use (pp 254, 338, 368, 610, 977, Exhibit 82).

422. Formal classroom quality assurance training was not being conducted on USS IWO JIMA with any regularity. Some aspects of quality assurance requirements were being addressed during other training lectures such as valve maintenance (pp 254, 300, 340, 341).

423. Ship's force personnel were not familiar with Level I material controls or Type Commander Quality Assurance procedures in general (pp 302, 339, 367, 375, 577, 610).

424. There are no controlled materials and/or storage areas within the M & B Division spaces. The Supply Petty Officers for both divisions are unfamiliar with controlled material handling procedures and have not received training in this area (pp 239, 659, 660, 685, 686, 734, Exhibits 82, 83).

425. The USS IWO JIMA has an extensive technical library which includes quality assurance documentation, equipment technical manuals, NAVSEA Valve Maintenance Manuals (14 vols), General Specifications for Overhaul of Surface Ships (GSO), NAVSEA Technical Manual (NSTM) chapters, etc. This documentation was readily available for use in repair work (p 263, Exhibit 151).

COMSERVFORSIXTHFLT

426. CAPT Van Christopher is the Maintenance Officer on the staff of COMSERVFORSIXTHFLT/CTF 63/COMNAVSURFGRUMED (p 394).

427. SRU Detachment Bahrain reports to SRU Naples which reports to COMSERVFORSIXTHFLT Maintenance Officer, CAPT Christopher (pp 395, 867).

428. COMSERVFORSIXTHFLT is not in the NAVSEA chain of command. If technical assistance for repair support is required, the Maintenance Officer will request it from COMNAVSURFLANT who will in turn request such assistance from various NAVSEA organizations (NAVSEACENLANT, NAVSSES, NAVSEA Technical codes) (p 395).

429. COMSERVFORSIXTHFLTINST 4700.2B is the guiding instruction for Middle East Force Ship Maintenance Policy and Procedures (p 405, Exhibit 79).

430. Prior to a Battle Group deploying from the east coast, COMSERVFORSIXTHFLT Staff would conduct a ship briefing on how maintenance is accomplished in the Mediterranean and Middle East operating areas (pp 396, 428, Exhibit 79).

431. It is COMSERVFORSIXTHFLT's policy that all systems/components that are CASREP items be restored to full operating capability as soon as possible with special consideration given to MIDEASTFOR operational urgency (Exhibit 79).

432. COMSERVFORSIXTHFLTINST 4700.2B directs MIDEASTFOR ships to include AIG SEVEN ONE as an action addressee on all CASREPs and the deployed Mediterranean tender as an information addressee. Additionally, COMSERVFORSIXTHFLT SRU DET BAHRAIN as an action addressee on all CASREPs and maintenance related messages is required (Exhibit 79).

433. A listing of generalized industrial capabilities available in the MIDEASTFOR area can be found in Paragraph 106 of COMSERVFORSIXTHFLTINST 4700.2B (Exhibit 79).

434. The COMSERVFORSIXTHFLT Maintenance Officer felt that the additional surveyors and other technicians sent to SRU Detachment Bahrain since the start of Operation Desert Shield were sufficient for the work load being experienced. Should work load demand or number of ships in the region increase, then support would be adjusted (pp 426, 455).

435. When filling limited surveyor billets at the two SRU offices, COMSERVFORSIXTHFLT maintenance personnel look for diversity of background to try and fill the perceived need (p 426).

436. USS IWO JIMA did not receive an inchop briefing by the COMSERVFORSIXTHFLT Staff on maintenance policy and practices in the Middle East prior to their arrival (p 449).

437. Prior to the accident on USS IWO JIMA, the COMSERVFORSIXTHFLT Staff was in the process of reviewing maintenance/logistics requirements in the Persian Gulf. Manning levels and skill requirements at the SRU Detachment Bahrain are part of that review (pp 881, 890).

SRU MANAGEMENT

438. The COMSERVFORSIXTHFLT Maintenance Officer is COMNAVSURFLANT's agent in all maintenance matters for ships in the Middle East. This responsibility has been further delegated down to the OIC SRU Detachment Bahrain for maintenance matters in the Persian Gulf (p 394).

439. The COMSERVFORSIXTHFLT Maintenance Officer felt that the SRU Detachment Bahrain, OIC, LCDR was meeting his assigned job tasking (pp 420, 424).

440. The SRU Detachment Bahrain personnel support prior to the Operation Desert Shield build-up consisted of one LCDR (OIC), one E8/E9 MOTU Technical Representative Coordinator, three ship surveyors, and four MOTU CETs (Contract Electronic Technicians) (Exhibit 79).

441. On 30 October 1990 there were approximately 84 personnel attached to SRU Detachment Bahrain. The original complement had been augmented by seven surveyors and about sixty NAVSEACENLANT/MOTU Technical Representatives (military/civilian) working in the operating theater (p 868).

442. The work load at SRU Detachment Bahrain significantly increased over the last four months. Ships serviced increased from about seven to 31 ships (pp 421, 505, 511, 766, 807, 808, Exhibit 171).

443. COMSERVFORSIXTHFLT SRU Detachment Bahrain Instruction 5400.1 (series) provides the organizational structure and duties of detachment personnel (p 513, Exhibit 143).

444. SRU Detachment Bahrain has minimal administrative support for its required functions. This problem deteriorated further with the influx of NAVSEACENLANT/MOTU Technicians and increased ship presence (pp 552, 560, 776, 869, 870).

445. There is no separate quality assurance organization within SRU Detachment Bahrain (pp 423, 532, 872, Exhibit 143).

446. LCDR volunteered to be the OIC of the SRU Detachment Bahrain for a six month assignment. He assumed those duties in July 1990 having come from SUPSHIP Jacksonville (pp 424, 448, 865).

447. The OIC billet at SRU Detachment Bahrain is changing to a one year permanent change of station (PCS) assignment (pp 447, 891).

448. Officers assigned to SRU Naples are on PCS orders and civilians are permanent billets. Assignments to Bahrain are temporary (exception is Senior Surveyor Billet) with length based on local needs. Personnel assigned to SRU Detachment Bahrain are volunteers (p 448).

449. The OIC SRU Detachment Bahrain shall remain constantly attuned to the ship's schedules and take all advantage to provide voyage repair assistance. He shall maintain a list of all CASREPs in theater and ensure all those requiring outside assistance are clearly and unambiguously assigned to a repair activity for accomplishment (Exhibit 143).

450. The OIC SRU Detachment Bahrain shall liaison with Type Commanders to ensure adequate support is being provided. He shall provide an inchop brief for all ships upon arrival (Exhibit 143).

451. The OIC for SRU Detachment Bahrain was in Dubai, UAE from 13 - 26 October 1990 (pp 420, 513, 749, Exhibit 142).

452. The OIC, SRU Detachment Bahrain, LCDR] was in daily contact with his office while in Dubai, 13 - 26 October 1990 (p 910).

453. During the OIC's absence from SRU Detachment Bahrain, LCDR , who is the NAVSEACENLANT Technical Coordinator attached to the SRU Detachment was acting as the OIC until relieved of such duties as OIC (pp 420, 514, 749, Exhibit 142).

454. The SRU Detachment Bahrain Technical Coordinator has the collateral duty of Assistant OIC (Exhibit 143).

455. LCDR was assigned TAD to SRU Detachment Bahrain as the Technical Coordinator for the NAVSEACENLANT preposition team billeted at SRU. He arrived 28 August 1990 (p 747).

456. LCDR was not aware that in his capacity as Technical Coordinator he also assumed the responsibilities of Assistant OIC SRU Detachment Bahrain (p 748, Exhibit 143).

457. The Assistant OIC SRU Detachment Bahrain is primarily responsible, under the OIC, for the organization, performance of duty, and good order and discipline of the detachment (Exhibit 143).

458. The Assistant OIC SRU Detachment Bahrain is to ensure that the OIC is advised of all events, casualties, deficiencies, and anticipated difficulties which may significantly affect the detachment (Exhibit 143).

459. The Technical Coordinator SRU Detachment Bahrain shall supervise the routing and internal handling of the detachment's messages (p 761, Exhibit 143).

460. The NAVSEACENLANT Technicians attached to SRU Detachment Bahrain are assigned to provide technical assistance in repairs by the Technical Coordinator, LCDR The surveyors are assigned by the Supervisor Surveyor to write work specifications and monitor work accomplishment on assigned ships. Their duties are not interchangeable (pp 516, 748, 918, Exhibit 143).

461. The NAVSEACENLANT Technicians residing at SRU Detachment Bahrain are available to assist the ship surveyor in preparing work specifications (pp 774, 895).

462. The Resident Detachment Marine Surveyor at SRU Detachment Bahrain is responsible for advising and assisting the OIC in ensuring administrative procedures of the Detachment are proper and responsive to the requirements. He shall supervise through the assigned surveyors the planning, funding, execution and documentation of repairs. He shall also be known as the supervisor surveyor (Exhibits 143, 194).

463. The Resident Detachment Marine Surveyor shall maintain the Detachment's library of official publications and execute an annual review. According to COMSERVFORSIXTHFLT SRU Detachment

Bahrain Instruction 5400.1 a wide variety of general technical material is available, including NAVSEA's General Specifications for the Overhaul of Surface Ships (GSO) and NAVSEA Technical Manual. (Exhibits 143, 194).

464. The Resident Detachment Marine Surveyor shall develop plans, schedules, and administer the repair of ships. He shall advise the OIC daily on the progress of all major repair items and assist the OIC in reviewing requests for repairs (Exhibit 143).

465. The position description for the Marine Surveyor at SRU Detachment Bahrain requires a knowledge of Level I and Level A ship repairs as a requirement for the position (Exhibit 194).

466. The Resident Detachment Marine Surveyor shall supervise all assigned surveyors in the execution of their work. He shall monitor contractors progress, quality of work, ship checks and completion dates (Exhibit 143).

467. The position description of the Marine Surveyor at SRU Detachment Bahrain requires him to coordinate the work required to repair ships. This includes rejecting work of contractors that does not meet contract specifications relative to repair procedures and quality assurance (Exhibit 194).

468. Mr. (GS-12) is the Senior Resident Surveyor assigned to the SRU Detachment, Bahrain. His position makes him the supervisor for all TAD surveyors and Administrative Officer for the Detachment (p 498, Exhibit 143).

469. Mr. 's work credentials include an enlistment in the Coast Guard (Second Class Machinist's Mate) working with diesels, 2 years as Third Engineer Merchant Marine (on tugs), Puget Sound Naval Shipyard as diesel mechanic followed by 2 years as mechanic in nuclear power followed by 9 years as Planner & Estimator, CTF 63 Staff for 5 years and then the last 2 years as Resident Marine Surveyor at SRU Bahrain Detachment (p 498).

470. Mr. is the only Resident Surveyor at the SRU Detachment Bahrain. All other surveyors working in Bahrain are TAD from Naples or CONUS (p 503).

471. SRU Detachment Bahrain has a technical library which is run by Mr. . According to Mr. the technical library is limited in scope and consists mainly of NAVSEA Standard Items, NAVSEA Technical Manual Chapters, cast off publications from other commands and ship's drawings provided during repairs (pp 510, 517, 529, 553, 758, 929, Exhibit 143).

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472. The SRU Detachment Bahrain technical library does not include the Valve Maintenance Manual (14 vols - NAVSEA S9253-AD-MMM-010 to 140) or the General Specifications for Overhaul of Surface Ships (GSO) (NAVSEA S9AA0-AB-G0S-010/GSO) (pp 509, 529).

473. SRU Detachment Bahrain is not on distribution to receive a copy of General Specifications for Overhaul of Surface Ships (NAVSEA S9AA0-AB-G0S-010/GSO) (Exhibit 80).

474. Mr. has requested additional technical documents for the technical library at SRU Detachment Bahrain. The requests went to the OIC for processing (p 535).

475. SRU Detachment Bahrain general ship surveyors work directly for the Resident Marine Surveyor. They coordinate the ship/contractor interface and operate with a high degree of independence in the performance of assignments (Exhibit 143).

476. The ship surveyor conducts pre-arrival conferences with ship's company and/or other U.S. Government representatives, reviews work requests (2K, CSMP, etc), and ship checks work to be performed in the assigned foreign port (pp 444, 530, 536, Exhibit 143).

477. The ship surveyor develops detailed work specifications for review by the supervisor surveyor for work to be performed in accordance with the latest directives, instructions, U.S. Navy Technical requirements and sound marine practices. The ship surveyor is responsible for their technical and contractual validity (Exhibit 143).

478. The ship surveyor conducts an arrival conference with the OIC and on-site ship checks with contractors and ship's company, interprets specification requirements to ensure all parties understand work to be accomplished (Exhibit 143).

479. The ship surveyor conducts in-progress surveillance of work in progress to ensure adherence to specification requirements, orders, directives and sound marine practices. He is responsible for final acceptance of all work performance by foreign contractors (Exhibit 143).

480. The ship surveyor develops required changes, deletions, etc, to basic work specifications. He provides on-site technical assistance and/or technical recommendations for the accomplishment of ship repairs (Exhibit 143).

481. The ship surveyor shall, daily, communicate the progress of major work items, material and technical problems to the surveyor supervisor (Exhibit 143).

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482. Selection of SRU Detachment Bahrain TAD surveyors is made by COMSERVFORSIXTHFLT in Naples. The SRU Detachment Bahrain does provide Naples with it's needs for surveyor personnel (p 504).

483. At the time of the USS IWO JIMA casualty there were seven TAD surveyors attached to the SRU Detachment Bahrain - two from Naples, three from Jacksonville, and two from Puget Sound Naval Shipyard (pp 504, 868).

484. It is not uncommon to have a surveyor assigned to more than one ship at a time or more than one job on a ship (p 440).

485. There are no indoctrination requirements for new surveyors or technical representatives upon arrival at SRU Detachment Bahrain (Exhibit 143).

486. The surveyors attached to SRU Detachment Bahrain are routinely flown to the area of the ships to write work specifications prior to the ship's arrival in the port of repair (pp 429, 513, 868).

487. Mr. [redacted] (Ship Surveyor) is TAD from SUPSHIP Jacksonville. His background is as an electronic's surveyor (10 years). Prior to serving in that capacity he performed duties as an Electronic's Shop supervisor and mechanic and was a planner and estimator at Norfolk Naval Shipyard. He arrived at SRU Detachment Bahrain on 1 October 1990 (pp 504, 921, Exhibit 188).

488. Mr. [redacted] s performance as a surveyor is characterized as "dedicated," "very conscientious," "puts in long hours," "tries to do the best possible job," and "knowledgeable" (pp 522, 764).

489. Mr. [redacted] (Ship Surveyor) is TAD from Puget Sound Naval Shipyard. His background is 17 years as a Machinist (diesel) Planner. He was attached TAD to SRU Detachment Bahrain previously from May 1989 to March 1990 for MSO support. He was specifically brought back on 25 September 1990 to again provide MSO support (pp 504, 525, 925).

490. Mr. [redacted]' performance as a surveyor is characterized as "dedicated," "outstanding work product," "excellent performer," and "tries to do the best he can" (pp 525, 526, 765, 766).

491. Both the OIC and Technical Coordinator at SRU Detachment Bahrain route copies of CASREP messages and other repair support messages to the Resident Detachment Marine Surveyor, Mr. [redacted] (pp 772, 893).

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492. The supervisor surveyor does not screen message traffic at SRU Detachment Bahrain. The OIC and Technical Coordinator screen all message traffic and internally routes copies to action personnel (p 545, Exhibit 143).

493. SRU Detachment Bahrain is an addressee on AIG 438 which means they receive CASREP messages from the Amphibious Task Force (pp 106, 749, Exhibit 147).

494. A message file is kept on each ship and is available to the surveyor. It contains all CASREP and maintenance related messages received by the SRU (p 893).

495. Work specifications written at SRU Detachment Bahrain are significantly different from those used at SUPSHIP/Naval Shipyard commands. The difference results from a lack of personnel specialties/numbers at Bahrain in comparison with CONUS assets (pp 426, 518).

496. The SRU surveyor drafts a work specification for the requested repair work. This specification is given to the Navy Regional Contracting Office who in turn contracts locally for repairs. Once the contract is awarded, the SRU surveyor will work with the contractor and ship to complete the repairs (pp 395, 408, 871, 872, Exhibit 143).

497. If there is no local work specification form on file for the repair requested, the SRU surveyor will create a work specification based on known information, assistance from other surveyors or ship check information when the ship arrives (pp 429, 506, 515, 530, Exhibit 188)).

498. The repair specification forms used at SRU Detachment Bahrain are excerpts from the NAVSEA Standard Items as originated at SRU Naples and modified for local use (pp 505, 530, 915, Exhibit 188).

499. Some but not all work specifications written by SRU Detachment Bahrain surveyors were reviewed by the Supervisor Surveyor (p 505).

500. It is not uncommon in an emergent repair package for the SRU surveyor to execute corrections and changes to the specification aboard ship. It is not uncommon to include those changes in a completion report afterwards (pp 429, 452, 884).

501. There are no requirements to document check point results on a repair specification. Satisfactory completion of the repair job, signed by the surveyor, will indicate that all checks within the specification were satisfactorily completed (p 533).

502. The OIC, SRU Detachment Bahrain stated that repair specifications were kept simple because of worker language barriers and because the contractor would not have copies of the specification reference documentation (p 879).

503. The contractor's worker is not expected to read the repair specification. The worker is to follow general repair guidance provided by his foreman or supervisor who does have the work specification (p 531).

504. Ship repair work is supposed to be signed off as complete prior to the ship departing port unless at sea testing is required. The surveyor signs off the job (pp 409, 534, 546, Exhibit 143).

505. Prior to calling a job complete, the surveyor must inspect the completed product and should contact ship's force for concurrence. The ship's force check allows for rework prior to the ship leaving port (p 454).

506. SRU Detachment Bahrain reviews all contractor bills to the government submitted for work they had contracted. They are responsible for making adjustments based on specification modifications (pp 546, 549, 555, 559, Exhibit 143).

507. SRU Detachment Bahrain personnel feel that Navy ships operating within their area of responsibility do not know the capabilities and/or repair charter of their organization (pp 396, 525).

508. The Ship Repair Contracting Manual (NAVSEA 0900-LP-079-5010), page 237, Paragraph 2-3a, defines Restricted Availability as "an availability for the accomplishment of work which cannot be postponed until the ship's next regularly scheduled overhaul. During which period the ship is rendered incapable of fully performing its assigned mission and task due to the nature of the repair work. During these RAV's, which normally require the ship to be present for performance of the work, the cognizant Type Commander may authorize accomplishment of non-urgent work items concurrently with the emergency work." (p 401).

509. The Ship Repair Contracting Manual (NAVSEA 0900-LP-079-5010) page 237, Paragraph 2-3c, defines emergency Voyage Repairs as "emergency work necessary to enable the ship to continue on it's mission which can be accomplished without requiring a change in the ship's operating schedule on the general steaming notice or the general steaming notice in effect. Voyage Repairs may be arranged by the Commanding Officer of the ship subject to confirmation by the Type Commander." (p 401).

510. Prior to the start of scheduled availabilities at Dubai, the only preplanned availabilities were on the USS LA SALLE. All other work arranged by SRU Detachment Bahrain was emergent or CASREP work (pp 395, 506).

511. The COMSERVFORSIXTHFLT Maintenance Officer and SRU Detachment Bahrain personnel repeatedly stated that they only conduct repairs that are classified as "Voyage Repairs". These repairs may be organizational, intermediate maintenance or depot level repairs in scope (pp 431, 460, 866, 867, 872, 873, 897).

512. The Navy Regional Contracting Center uses the Ship Repair Contracting Manual (Repair Manual - NAVSEA 0900-LP-079-5010) to establish contracts for repairs or establish master ship repair contractor status when dealing with local area contractors (p 396).

513. SRU Detachment Bahrain did not hold a copy of the Master Agreement for Repair and Alteration of Vessels with BASREC (N68171-85-H-0031) (Exhibits 140, 188).

514. If SRU Detachment Bahrain cannot contract locally for the requested work, it can cancel the job, rescreen for a Tender Fly Away Team (FAT), or forward the job to SRU Naples for further action (pp 525, 539, 773, 871).

515. Contractual agreements to accomplish limited hull, mechanical, and electrical repairs currently exist with six companies in Bahrain. These companies are: Arab Shipbuilding and Repair Yard (ASRY), Bahrain Ship Repair and Engineering Company (BASREC), Brown and Root Company, Halliburton Services Corporation, AIRMECH Eastern Engineering Limited, and Maharaque Engineering LTD (p 511, Exhibit 79).

516. SRU Detachment Bahrain oversees contracts with Dubai Drydock which has extensive hull, mechanical and electrical capabilities (pp 408, 512, 868, Exhibit 79).

517. SRU Detachment Bahrain has contracted for Level I work from local industrial repair organizations. The contractor used was BASREC (pp 414, 508, 772, 898, 899).

518. On Level I repair taskings that require material, the material is normally provided by the ship. SRU Detachment Bahrain does not carry Level I material (p 524).

519. If the contractor is required to provide material under a work specification, then the applicable Navy military standard requirements will be annotated. The SRU surveyor will be required to ensure the material provided meets the Navy's specifications (pp 524, 891, 892).

BASREC MANAGEMENT

520. Mr. , the pipefitter who worked on 2MS-7, stated it was common practice to ask ship's force for assistance on a repair job before approaching his foreman, supervisor or SRU surveyor (pp 487, 488, 490, 591).

521. If the BASREC employee could not obtain required material from the ship, he would go to his foreman to ask for the material. The foreman would submit a requisition to the BASREC shop store and provide it to the worker (pp 419, 496, 591).

522. When a check point is reached in a job, the workman is to notify his supervisor. If the foreman is not available, he is to go to the SRU surveyor (p 590).

523. Mr. was Mr. supervisor at BASREC shipyard. His responsibility was to coordinate repairs between the SRU surveyor and contractor workers. Mr. had been employed by BASREC for six years (pp 452, 580, 583).

524. Mr. is a British citizen whose background is as a marine engineer. He is currently working ashore prior to returning to sea to earn his second engineer license (p 580).

525. Mr. supervised seven BASREC workers assigned to complete four work items on USS IWO JIMA 25 - 30 October 1990 (p 581).

526. Mr. cannot converse in Hindi, the language Mr. speaks. He is able to convey work requirements well enough to get what he considers 100 percent work results (p 586).

527. Mr. worked directly with the SRU surveyor to resolve work problems. He also requested BTC to have ship's force personnel witness all valve lapping/bluing (p 588).

528. Work specifications that Mr. received, that included technical references, were usually for technical equipment (machinery) not valves (p 589).

529. QA training as practiced in the U.S. Navy has no counterpart at BASREC. All QA training on repair processes is done on the job by skilled foremen (p 590).

530. BASREC personnel work on all nationality ships both steam and diesel driven. Work specifications on U.S. Navy steam plants are much more restrictive than merchants (p 591).

531. To BASREC personnel, the surveyor is primarily responsible for checking the adequacy of work conducted. Different surveyors will check to the work specifications imposed - U.S. Navy, Lloyds, American Bureau, etc. (p 593).

532. The Master Agreement for Repair and Alteration of Vessels with BASREC (N68171-85-H-0031) does not reference the Ship Repair Contracting Manual (Repair Manual - NAVSEA 0900-LP-079-5010) for applicability (Exhibit 140).

533. The Master Agreement for Repair and Alteration of Vessels with BASREC (N68171-85-H-0031) has been in effect since October 1984. There are two amendments to the contract, P00001 of 5 July 1985 and P00002 or 22 September 1986 (Exhibit 140).

534. Paragraph one of the Master Agreement for Repair and Alteration of Vessels with BASREC (N68171-85-H-0031) states "...It is further agreed that the clauses set forth herein are mandatory and shall, by reference and attachment, be incorporated in each job order awarded pursuant to this agreement" (p 398, Exhibit 140).

535. Contract N68171-85-H-0031, Clause 4, Paragraph (d) states, "Except as otherwise provided in the job order, the contractor shall furnish all necessary material, ...as are necessary for accomplishing the work specified in the job order subject to the right reserved in the government under Clause 9 herein entitled government furnished property" (Exhibit 140).

536. Contract N68171-85-H-0031, Clause 5, Paragraph (a) states "Work shall be performed hereunder in accordance with the job order, and any drawings and specifications made a part thereof, as modified by any change order..." (p 398, Exhibit 140).

537. Contract N68171-85-H-0031, Clause 5, Paragraph (b) states, "All operational practices of the contractor and all workmanship and material, equipment, and articles used in performance of work hereunder shall be in accordance with the best commercial marine practices, except where Navy specifications are specified in the job order in which case Naval standards of material and workmanship shall be followed. The specification shall prescribe the Naval standard whenever applicable..." (p 398, Exhibit 140).

538. Contract N68171-85-H-0031, Clause 5, Paragraph (c) states, "All material and workmanship shall be subject to inspection and test at all times during the contractor's performance of the work to determine their quality and suitability for the purpose intended and compliance with the job order ... As specified in the job order, the contractor shall provide and maintain an inspection system acceptable to the government covering the work specified in the job order. Records of all inspection work by the contractor shall be kept complete and available to the government during the performance of the job order..." (p 398, Exhibit 140).

539. Contract N68171-85-H-0031, Clause 6 states "The Contracting Officer may at any time, by written change order, and without notice to the sureties, make changes within the normal scope of any job order issued under this agreement in (i) drawings, designs, plans and specifications, (ii) work itemized in any job order ... nothing in the clause shall excuse the contractor from proceeding with the job order as changed" (Exhibit 140).

540. Contract N68171-85-H-0031, Clause 9, Paragraph (a) states "The government shall deliver to the contractor... the government furnished property described in the schedule on specifications ...." (p 399, Exhibit 140).

OPINIONS

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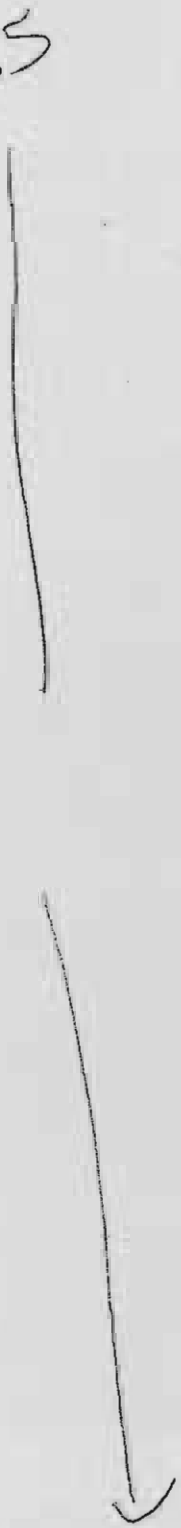


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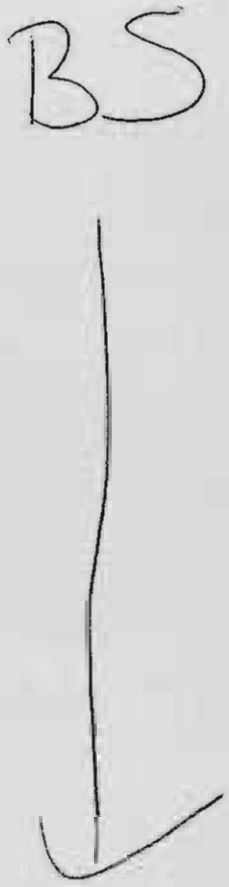
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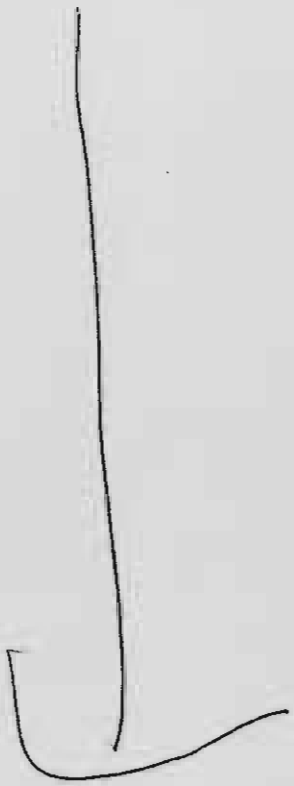

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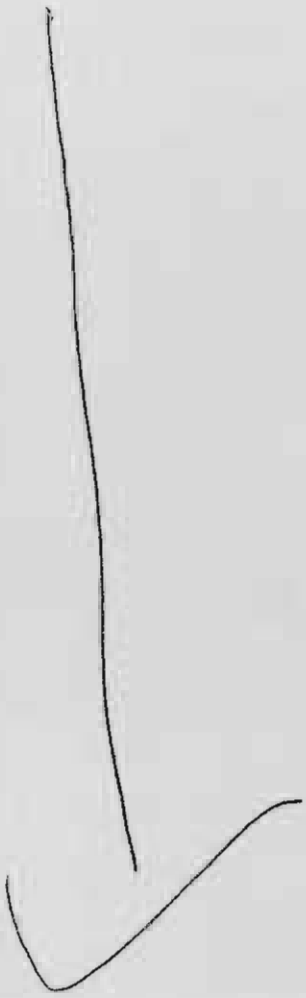

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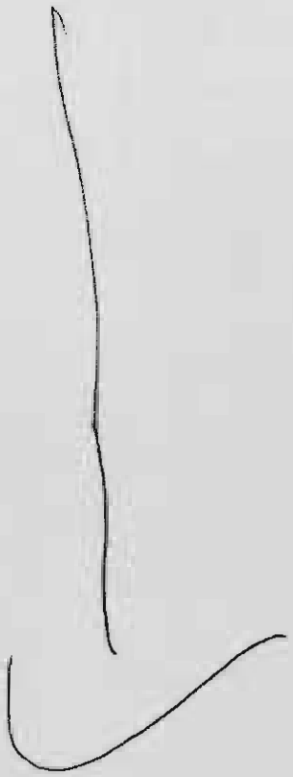

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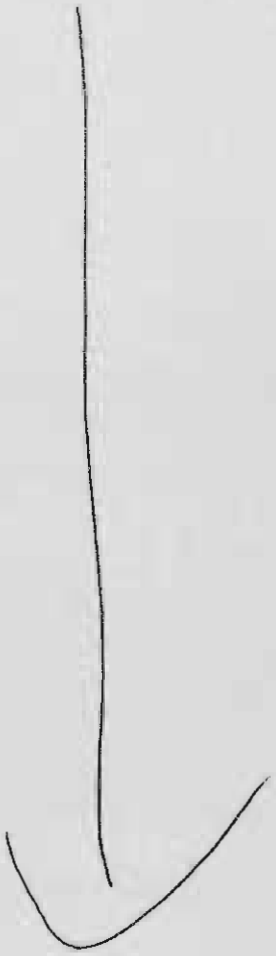

10. That Mr. Ship Surveyor, Ship Repair Unit Detachment Bahrain be presented a Letter of Reprimand pursuant to the Office of Civilian Personnel Management directives.

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Rear Admiral, U.S. Navy
President

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Captain, U.S. Navy
Member

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Captain, U.S. Navy
Member

Authentication

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Rear Admiral, U.S. Navy
President

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Captain, JAGC, U.S. Navy
Counsel for the court

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