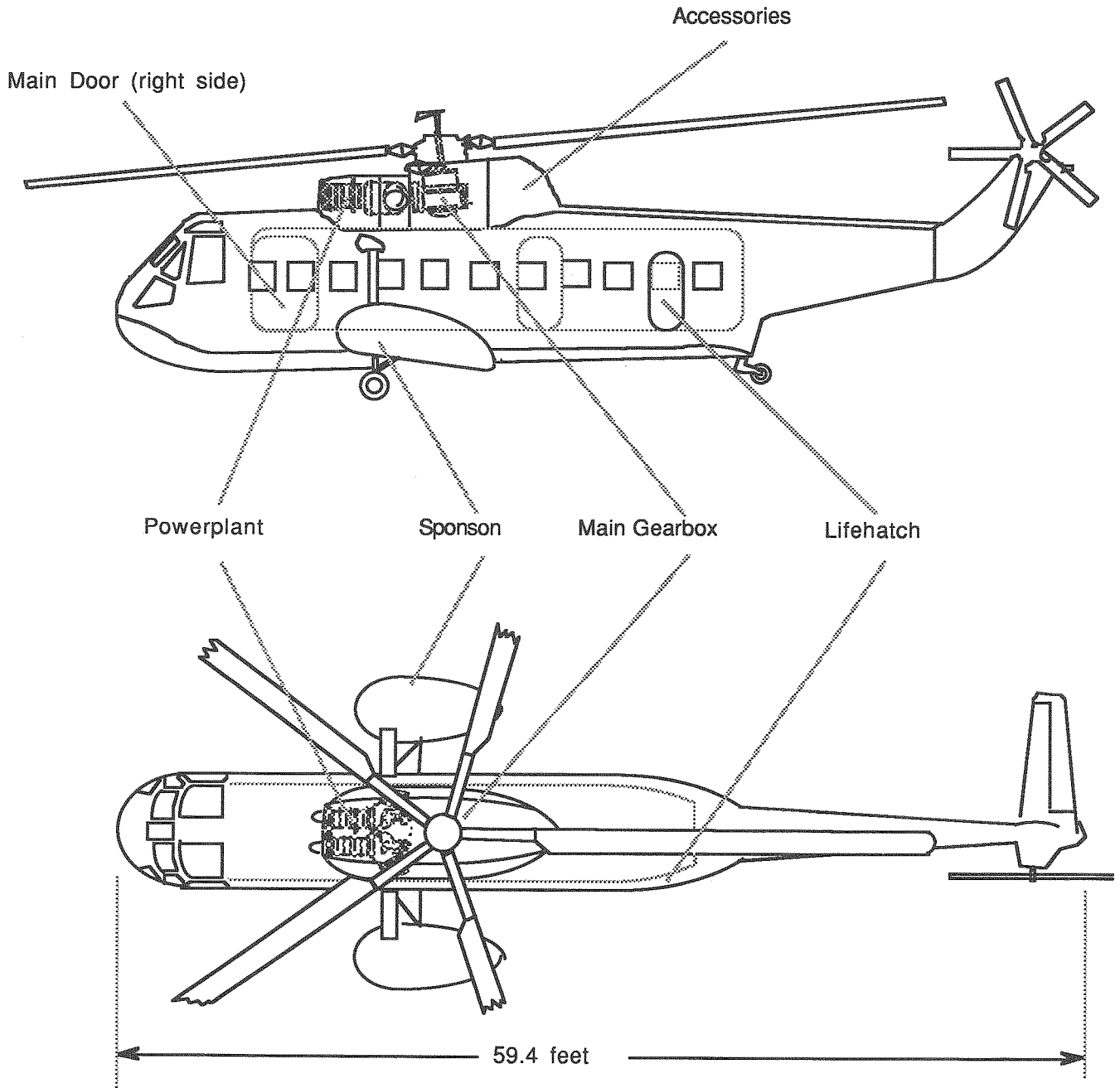
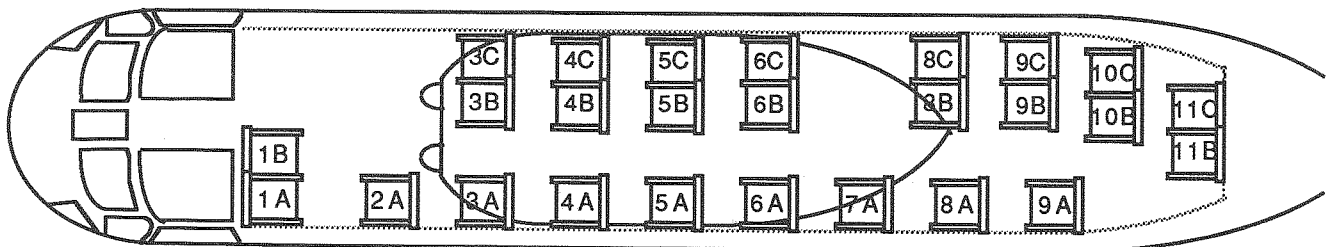


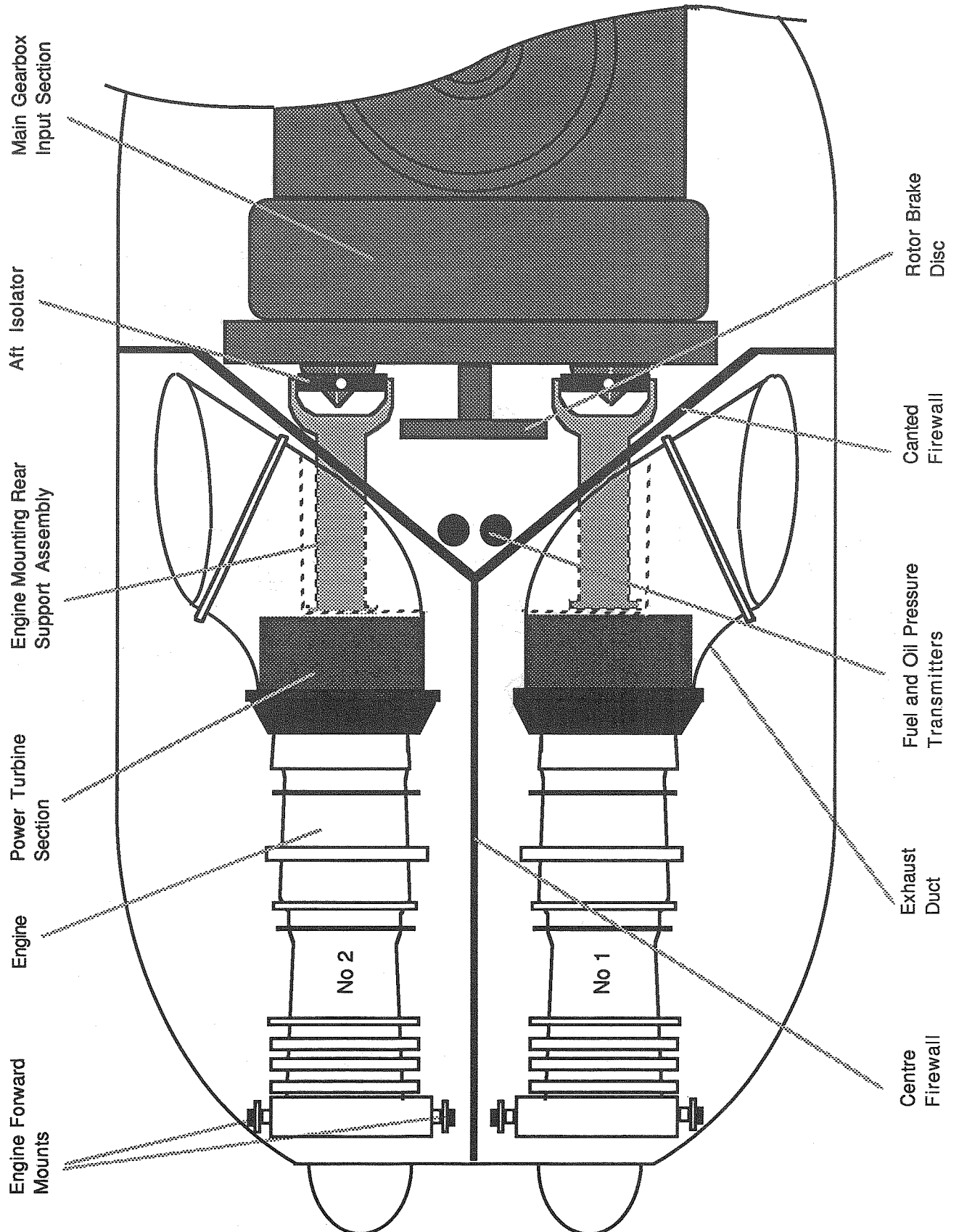
AIRCRAFT GENERAL LAYOUT



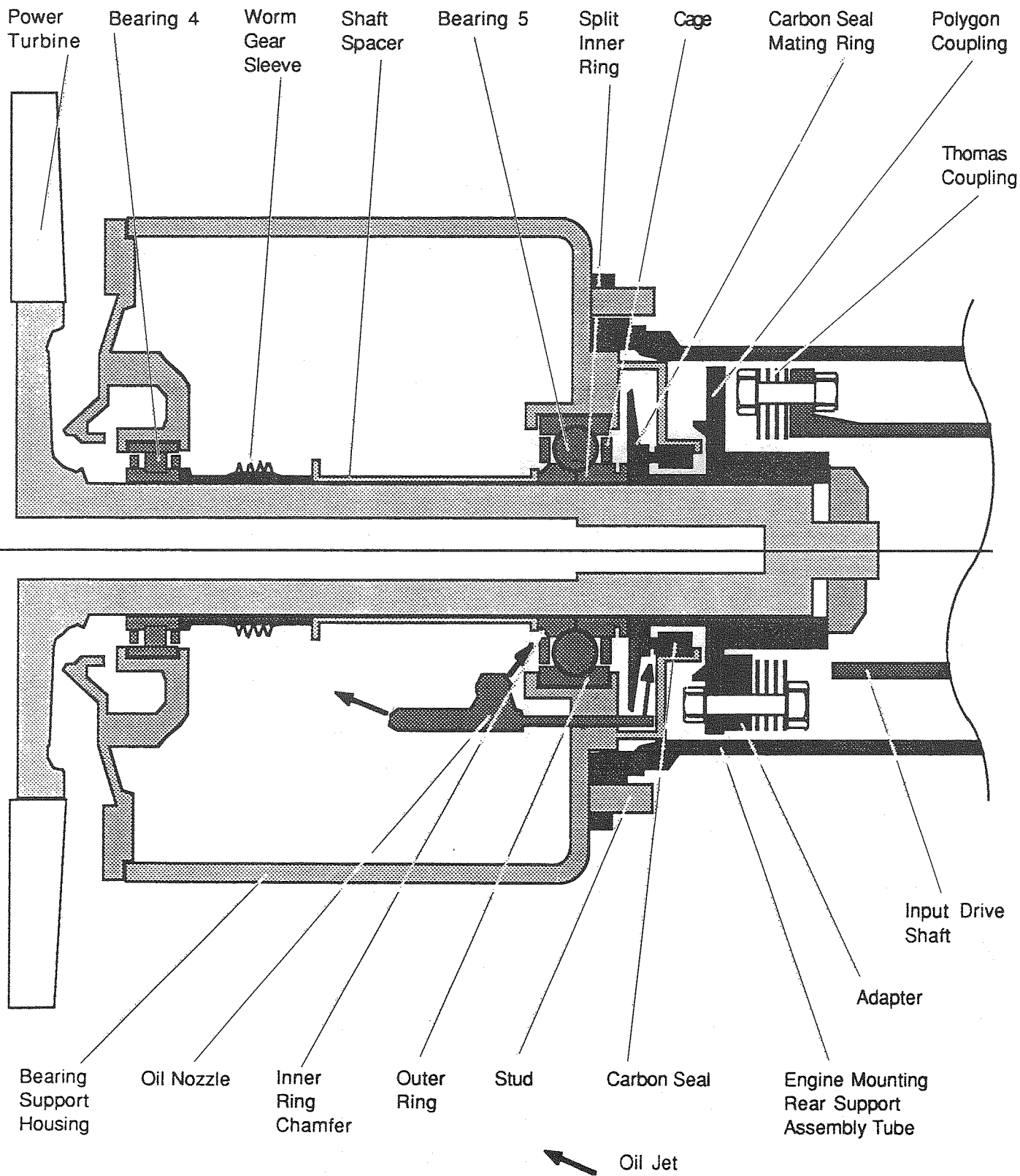
Passenger Seating Layout



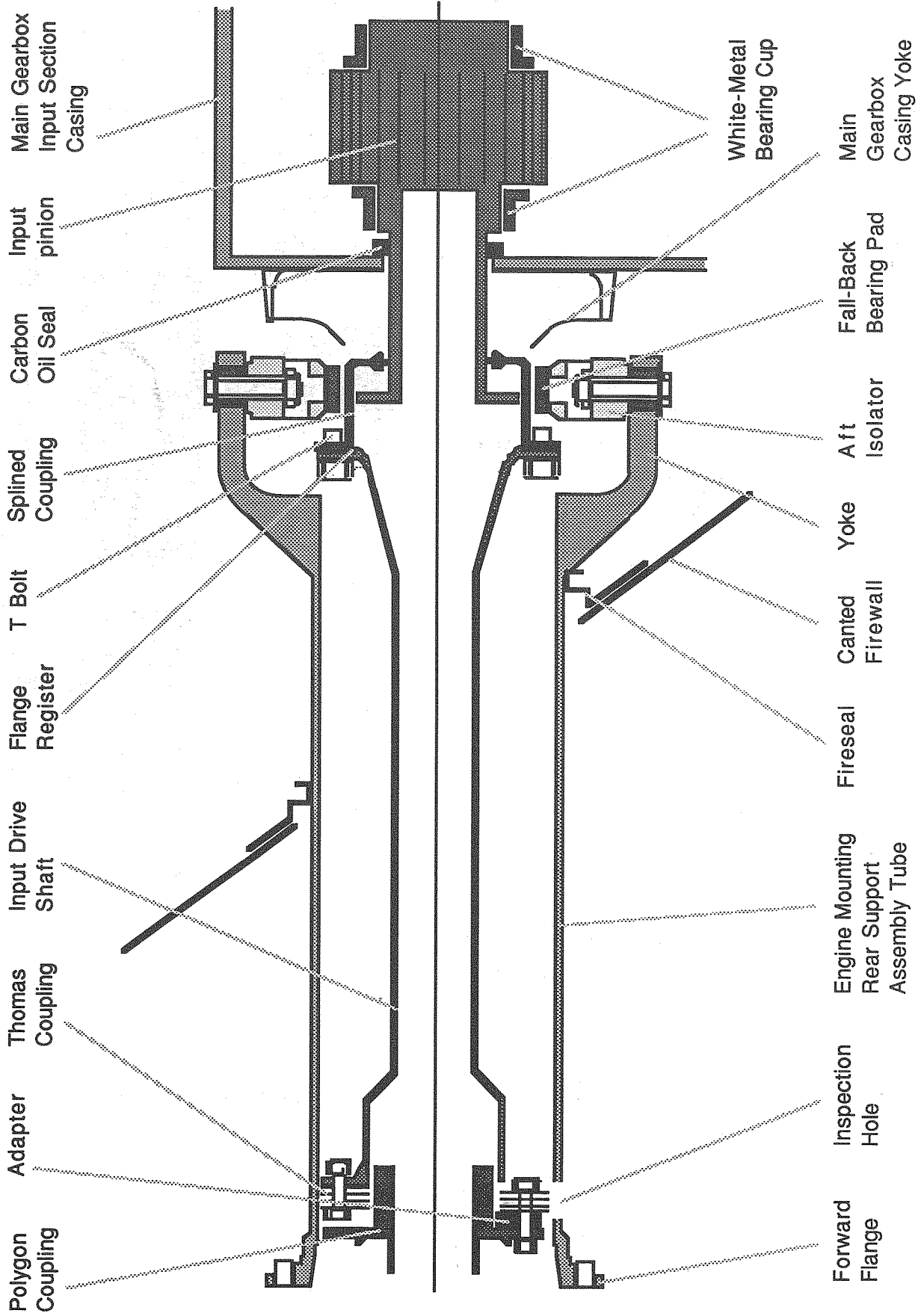
POWERPLANT AND MAIN GEARBOX LAYOUT



POWER TURBINE LAYOUT



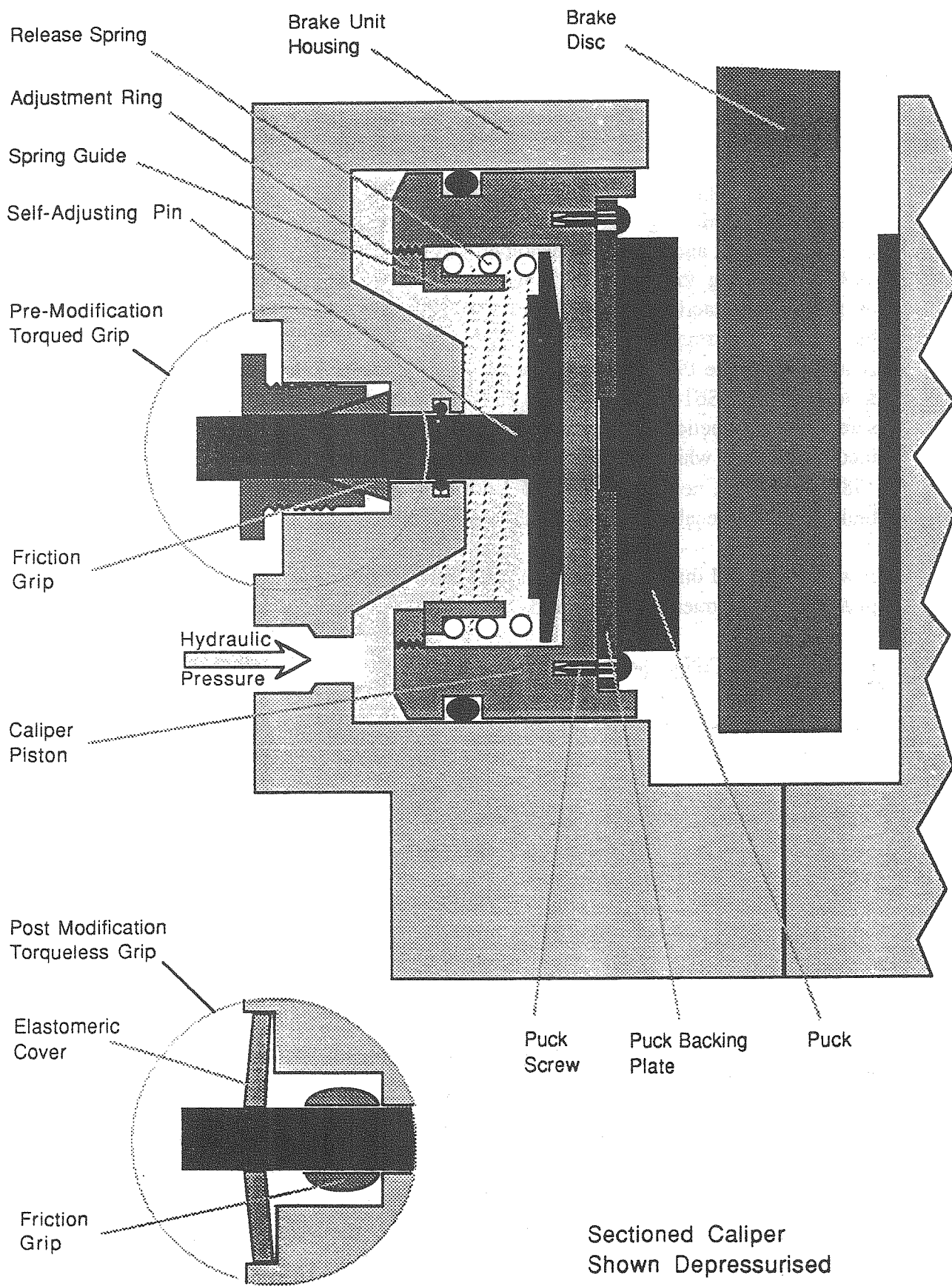
DRIVE TRAIN LAYOUT



Polygon Coupling
 Adapter
 Thomas Coupling
 Input Drive Shaft
 Flange Register
 T Bolt
 Splined Coupling
 Carbon Oil Seal
 Input pinion
 Main Gearbox Input Section Casing

White-Metal Bearing Cup

Forward Flange
 Inspection Hole
 Engine Mounting Rear Support Assembly Tube
 Fireseal
 Canted Firewall
 Yoke
 Aft Isolator
 Fall-Back Bearing Pad
 Main Gearbox Casing Yoke
 Main Gearbox Casing Yoke



Sectioned Caliper
Shown Depressurised

A) Loose puck screws

Puck screws specified for the original standard of the brake, PN 944034, were type NK 526-632-5, 7.8mm long. Goodyear Service Bulletin (SB) S61-32-2, Rev 0, issue date 20 September 1985, and Sikorsky Customer Service Notice (CSN) S35-5, issue date 22 June 1986, modifying the brake to asbestos-free puck standard (PN 9440345-1), and to torqueless grip standard (PN 9440345-2) specified 9mm long NAS 1190-06P6 type screws but without requiring the screw holes in the pistons to be deepened. Rev 1 of SB S61-32-3, issue date 30 June 1986, corrected the error by specifying 7.8mm long -5 screws. This was followed by SB S61-32-2, issue date 28 November 1986, which required 9mm long -06P6 screws in conjunction with deepening of piston screw holes and a change in piston PN, incorporation of which was advised by Sikorsky CSN S35-5, Rev A, issue date 2 March 1987. However, neither SB S61-32-3 nor CSN S35-5, Rev A, required a change to the brake unit PN to enable units on which they had been incorporated to be identified.

It was also noted that an anti-corrosion compound was applied between the puck and the piston on puck fitment, which would have had the effect of masking any puck looseness.

B) Caliper bolt/nut torque

No firm cause could be found for the looseness in the bolts and nuts holding the two halves of the caliper together, which was found in some cases, but differences were noted in the assembly torques specified between the Sikorsky Maintenance Manual and the Goodyear Overhaul Manual. The former did not specify a torque value in the section (Chapter 65-50-2, Page 207, Step 19) covering reassembly, and the standard values of Chapter 20 thus applied, *i.e.* an assembly torque, unlubricated, of 325 in.lb for the bolt and 275 in.lb for the nut. However, the Goodyear Manual 9440345 (Page 703/4, Para K) specified a lubricated torque value of 160 - 190 in.lb.

C) Insufficient puck - disc clearance

Cases of insufficient puck clearance from the disc appeared to have resulted from a design feature of the torqueless grip modification, whereby the grip for the self-adjusting pin was not restrained from moving outwards (away from the disc) in its bore in the caliper body. This feature was unlike its predecessor, the torqued grip, which was restrained in both directions. If a piston were pushed into its cylinder during brake removal or refitment, or in the course of puck replacement, the torqueless grip would be moved outwards away from its inner stop. In this condition, the internal gap between the spring guide and the pin head, on which the puck back-off function with the brake released depends, would be lost following initial brake application. It was found that in this condition the puck would ratchet towards the disc during initial brake applications, finishing up in contact with the disc when the brake was released. Such an effect should have been detected by tests required after brake installation.