

14. The Air Force placed an order with Hoffman Electronic Corporation of Los Angeles, California, to undertake a major production contract for AN/ARN 21-C TACAN equipment, which is the airborne portion of a ground-linked, short-range, navigational aid system [7] with a strict requirement of implementing a complete reliability and maintainability engineering program. The economic advantages of these "build-it-right-the-first-time" procurement actions taken by the Air Force and Hoffmann can be summarized as follows and in Table 1.2 :

14.1 Price savings of \$445 per set times 10,000 sets on order or \$4,450,000.

14.2 Service life estimates of 3,000 hr.

14.3 8.5 times more reliable; i.e., 17.5 hr versus 150 hr *MTBF*.

14.4 Maintenance costs per failure of \$140.

14.5 In one year on 10,000 sets of navigational systems \$70,650,000 was saved.

**TABLE 1.2 – Cost benefits in the TACAN reliability program [7].**

	AN/ARN 21-B (Old model)	AN/ARN 21-C (New model)
Failure/1,000 hr (1 yr) (1 year's operation)	57.2	6.66
Maintenance costs/1,000 hr, per set (1 yr)	\$8,000	\$935
Maintenance costs/1,000 hr, 10,000 sets (1 yr)	\$80,000,000	\$9,350,000
Total savings in maintenance and support costs per year		\$70,650,000