

UACL'S PRODUCT

ENGINE DEVELOPMENT

UACL produces small, lightweight gas turbine engines that are economic and reliable to operate over a wide range of conditions.

In a successful engine program as many as ten different models may be produced in quantity over a 25 year period with the last model having well over twice the power of the first model. This increase in power must be achieved for:

- (i) small increases in cost and weight,
- (ii) decreases in fuel consumption rate, and
- (iii) an ever increasing reliability.

To cope with the demands of the market, a great deal of development effort must be invested over the engine program life, and particularly at the early stages of the program, to:

- (i) "build in" a portion of the anticipated growth potential of the engine, and
- (ii) ensure low production costs right from the very first engine.

The balance of the development effort must be invested over the life of the entire program for:

- (i) the refinement and support of each existing model, and
- (ii) the development of each successive engine model.

It is noted that the cumulative non-recurring expenses associated with engineering, design and production start-up at the end of an engine program, can be of the order of six times the cumulative non-recurring costs incurred to the start of production on the first engine model of the line.

TECHNOLOGY TRENDS

In the future, advances in gas turbine engine performance are likely to be achieved through increases in heat addition during combustion (with engine volumes and weights per unit of output power lower than today's engines). Hand-in-hand with this, higher compression pressure