

CLASSIFICATION OF MODIFICATION

1.0 Introduction

- 1.1 This is a general guideline for consideration in classifying a modification as major or minor.
- 1.2 Chart 1 outlines the criteria in assessing a modification or repair as major or minor. For each issue, it must be determined whether or not the proposed change will have other than a negligible effect. The questions require "yes" or "no" responses. An affirmative answer to any individual question indicates that the modification or repair should be classified as major.

2.0 Major Modifications

2.1 Typical major modifications are listed below: -

- a) increase in gross mass and/or changes in the centre of gravity (cg) range;
- b) installation or relocation of equipment and systems or changes which may adversely affect structural integrity, flight or ground handling characteristics of the aircraft. For example, engines, engine pylons, auxiliary power units, propellers of a different make or model; pressurization systems; alternate static air or pressure systems; initial or prototype installation of an automatic flight control system which changes servo forces, servo rates or any flight control or performance characteristics; and the relocation or changes of throttle levers, flap controls and similar items;
- c) any change (alteration) of movable control surfaces which may affect flight characteristics or performance or make any difference (plus or minus) in the mass distribution;
- d) change in control surface travel outside approved limits, control system mechanical advantage, location of control system component parts, or direction of motion of controls;
- e) changes in basic dimensions or external configuration of the aircraft, such as wing and empennage planform or incidence angles, canopy, cowlings, contour or radii or location of wing and tail fairings, engine pylons, etc;
- f) changes to landing gear, such as internal parts of shock struts, length, geometry of members or brakes and brake systems and wheels;
- g) any change to engine pylons, cowling and/or baffling which may adversely affect the flow of cooling air and changes to manifolding;
- h) changes to primary structures which may adversely affect strength or flutter and vibration characteristics;
- i) changes to systems which may adversely affect aircraft airworthiness such as relocation of exterior fuel vents, use of hydraulic components, tube material and fittings not previously approved or use of new type fusible hydraulic plugs;
- j) changes to oil and fuel lines or systems which may adversely affect their operations, such as new type of hose and hose fittings, changes in fuel dump valves, new fuel cell sealants, new fuel or oil line materials and new fuel or oil system components;
- k) any change to the basic engine or propeller design controls or operating limitations and unapproved changes to engine adjustments and settings having an effect on power output;
- l) changes in a fixed fire extinguisher or detector system which may adversely affect the system effectiveness or reliability, such as relocation of discharge nozzle or detector units, use of new or different detector components in new circuit arrangements; deletion of detector units or discharge nozzles; change extinguishing agent or decrease in amount of extinguishing agent;
- m) changes which do not conform to the minimum standards established in a CAA approval (such as TSO) under which a particular aircraft component or equipment is manufactured;
- n) modifications to approved type (such as TSO) radio communications and navigational equipment which may adversely affect reliability or airworthiness, such as
 - (i) changes which deviate from the component operating limitations as prescribed by the manufacturer;

- (ii) changes to IF frequency
 - (iii) extension of receiver frequency range above or below the manufacturer's extreme design limits;
 - (iv) major changes to the basic design of the avionic systems;
 - (v) changes which deviate from the design environmental performance;
- o) changes to aircraft structure or cabin interior of aircraft which may adversely affect evacuation of occupants in any manner; and
- p) changes in aeroplane flight manuals and/or manual information in the form of placards or markings.
- 2.2 Other modifications which may be considered as major modifications due to the nature of the change proposed by the operator:
- a) use of synthetic covering material
 - b) substitution of materials, parts or processes on which insufficient information is available;
 - c) new plating applications;
 - d) new materials applications;
 - e) ceramic coatings;
 - f) use of synthetic resin glues;
 - g) new stripping or plating coatings;
 - h) new welding or brazing techniques;
 - i) welding of certain types of propeller or engine parts
 - j) application of TSO to specific installations
 - k) alternative means for complying with Airworthiness Directives;
 - l) any other complex special processes which, if not properly performed could have an adverse effect on the integrity of the product; and
 - m) any change to a required aircraft instrument system, flight management system or automatic flight control systems.

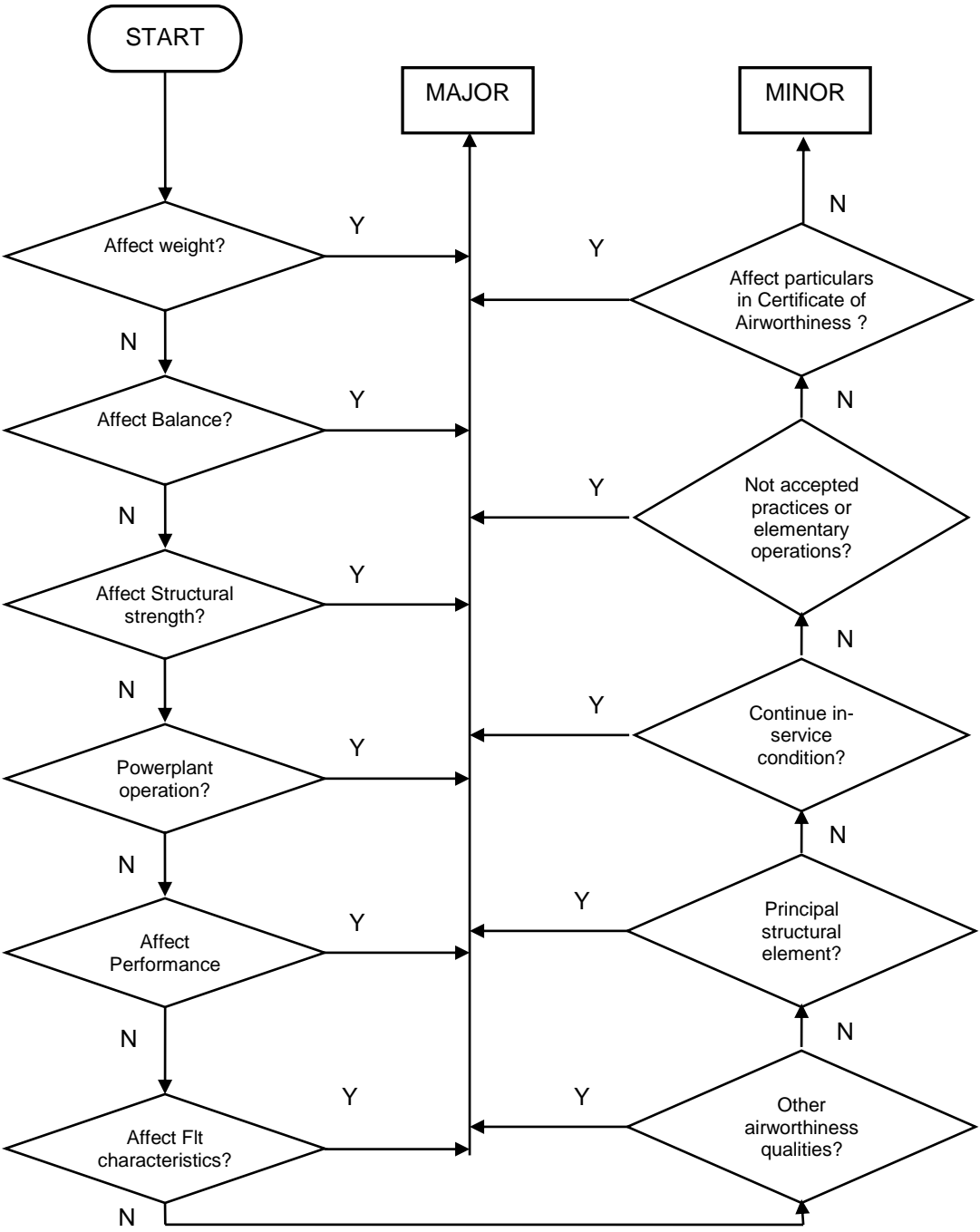


Chart 1: Criteria for the Classification of Major and Minor Modification