

- (a) Production indicated airspeed, test indicated airspeed, and configuration.
- (b) Correct the test indicated airspeed for instrument error and, in the case of electronic devices, any known dynamic effects. Static pressure in the bottle is assumed to result in no position error. These corrected airspeed values may be assumed to be CAS.
- (c) Calculate the amount of system error (difference between corrected trapped static indicated airspeed and production indicated airspeed).
- (d) Plot IAS versus CAS within the required range of speeds. See Figure A9-8 for a sample plot.

THIS PAGE INTENTIONALLY LEFT BLANK

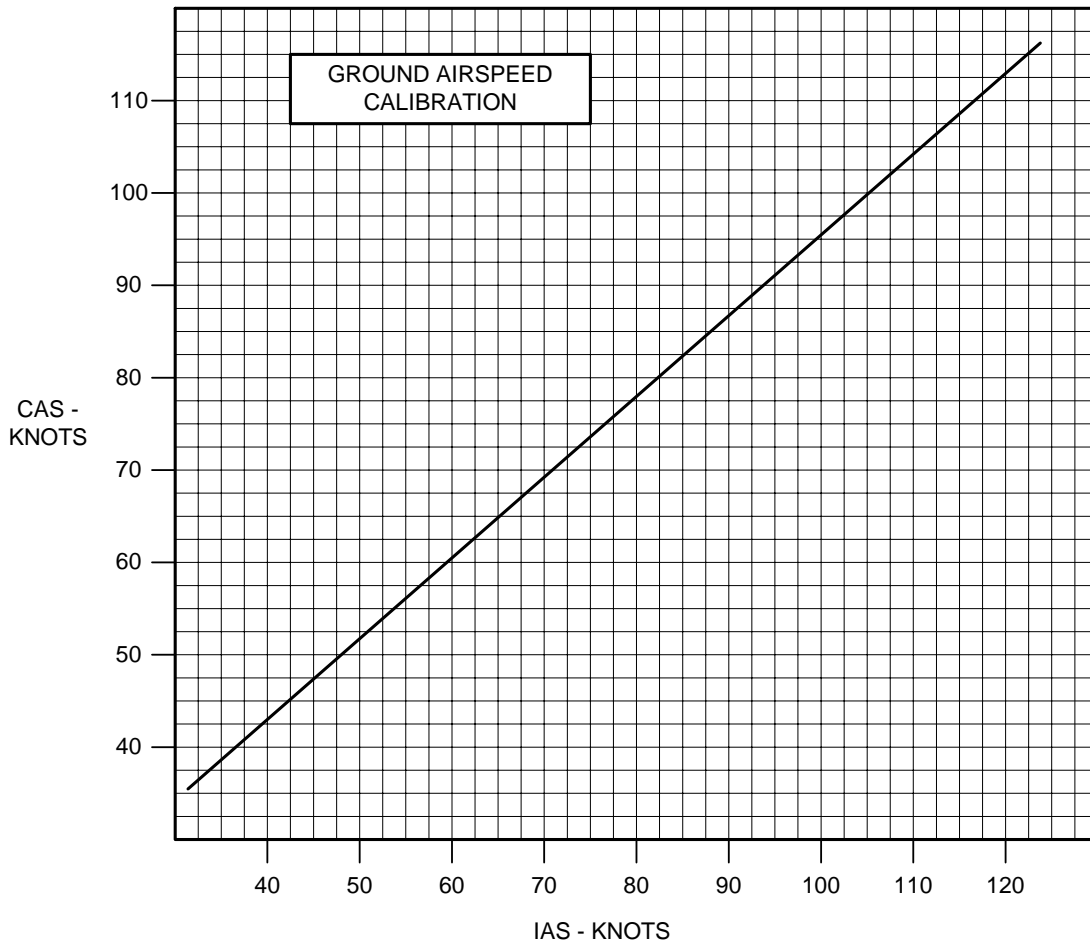


Figure A9-8 - GROUND AIRSPEED CALIBRATION

THIS PAGE INTENTIONALLY LEFT BLANK

c. Distance Measuring Unit Method. The distance measuring unit method consists of utilizing the readouts of ground speed to obtain CAS values within the required range of speeds. These values are compared with readings at the same instant on a production airspeed indicator. Airspeed indicator readings may be recorded by film or video cameras for mechanical airspeed indicators or by electronic means if a transducer type device is being utilized. There should be a method of correlating recorded airspeeds with the CAS values obtained from the distance measuring unit system.

(1) *Test Conditions.*

- (a) *Air Quality.* The surface wind velocity should be steady, as low as possible, and not exceed 10 knots. The wind direction should be as near as possible to the runway heading.
- (b) *Weight and C.G.* Same as for the trapped static source method.
- (c) *Speed Range.* Same as for the trapped static source method.

(2) *Test Procedures.*

- (a) Align the airplane with the runway.
- (b) Conduct a takeoff acceleration using normal takeoff procedures. The distance measuring unit should be recording/determining the ground speeds. The camera should be recording speeds from the production airspeed indicator and the time or counting device utilized to correlate speeds.
- (c) The takeoff may continue or be aborted when beyond the maximum required speed.
- (d) Record surface wind velocity and direction; surface air temperature and runway pressure altitude for each run.
- (e) Repeat steps (a) through (d) of this paragraph until there are sufficient runs to provide adequate calibration curves for the required configurations.

(3) *Data Acquisition and Reduction.* Read the recorded data (film or video) at increments of airspeed arbitrarily selected within the required range. For these same increments, determine the ground speeds from the distance measuring unit system. See Table A9-3 for a sample data reduction. Record and perform the following:

THIS PAGE INTENTIONALLY LEFT BLANK