Background to Porter (1980)

- Context: Information retrieval (IR).
  - Finding *relevant* documents in a collection by string-matching a query.
- *Cranfield 200*: Standard test-set of queries and documents (actually just titles and abstracts).
- Known correct answers for each query.
  Typically, ~12 documents are relevant for each.
- Use to compare different matching methods.

.T
experimental investigation of the aerodynamics of a wing in a slipstream .
.A
brenckman,m.
.B
j. ae. scs. 25, 1958, 324.
.W
experimental investigation of the aerodynamics of a wing in a slipstream .
  an experimental study of a wing in a propeller slipstream was made in order to determine the spanwise distribution of the lift increase due to slipstream at different angles of attack of the wing and at different free stream to slipstream velocity ratios . the results were intended in part as an evaluation basis for different theoretical treatments of this problem .
  the comparative span loading curves, together with supporting evidence, showed that a substantial part of the lift increment produced by the slipstream was due to a /destalling/ or boundary-layer-control effect . the integrated remaining lift increment, after subtracting this destalling lift, was found to agree well with a potential flow theory .
  an empirical evaluation of the destalling effects was made for the specific configuration of the experiment .

.W
what similarity laws must be obeyed when constructing aeroelastic models of heated high speed aircraft .
.W
what are the structural and aeroelastic problems associated with flight of high speed aircraft .
.W
what problems of heat conduction in composite slabs have been solved so far .
.W
can a criterion be developed to show empirically the validity of flow solutions for chemically reacting gas mixtures based on the simplifying assumption of instantaneous local chemical equilibrium .

Precision and recall

- Unlikely perfection: Method returns all relevant documents and only those.
- **Precision:** The fraction of documents returned that are relevant.
- **Recall:** The fraction of relevant documents that are returned.
- Trade-off between precision and recall.
- **F-measure:** Harmonic mean of precision and recall: $F = 2PR\ /(P + R)$

11-point interpolated precision

- If the system also ranks documents in decreasing order of relevance, then we can fix recall at any value *r* and measure precision at that point.
- Choose $r = 0.0, 0.1, 0.2, \ldots, 1.0$
- In practice, precision values need to be interpolated.
  (Those precise values of *r* are unlikely to be seen.)