

The aforementioned three records, viz. Magnetometer, Altimeter and 35mm film are correlated by a Doppler driven timing or fiducial system which imposes serially numbered marks at one nautical mile intervals on each of the records simultaneously.

On the ground, a Gulf Fluxgate Magnetic Storm Monitor was continuously maintained over a twenty-four hour basis so that no aeromagnetic data would be accepted if obtained during period of abnormal magnetic disturbance.

2. Doppler Techniques.

The navigation used was pure Doppler, without resort to visual map aids. Using this navigation system which has a computer integrated Kearfott compass system, along track and off track distance relative to a given start point can be read off at any time.

At the survey base, a feature was selected which could be readily identified from the air; this feature was used as a start and finish point for each flight sortie. Effectively, the pre-determined along track and off track settings were set into the Doppler mechanism and the instrument was manually activated on passing over the start point at the commencement of each flight.

When flying, the aircraft's position can be ascertained relative to the start point by reference to the along and off track dials.

After performing the desired survey configuration, the flight would terminate by flying over the start point, the pilot manually switching off the Doppler. The survey mis-close could be then read as increments of along and off track distance relative to this point of commencement. The only minor difficulty encountered during flight operations was in the computer which introduced an occasional random error on the reciprocal track. This necessitated close scrutiny of heading checks in flight to determine necessary track correction for reciprocal direction.