PRACTICAL AIR NAVIGATION AND THE USE OF THE AERONAUTICAL CHARTS OF THE U. S. COAST AND GEODETIC SURVEY

by

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(15×23 cm., 185 pp., 96 figures+Tables : *Special Publication N°* 197 of the Coast and Geodetic Survey, 2nd Edition, 1938, Government Printing Offices, Washington, D.C. : Price 50 c.)

This New Edition published by the Coast and Geodetic Survey is a practical manual of air navigation explaining the use of this Service's aeronautical charts constructed on the LAMBERT conformal conic projection — a projection which so far had come very little into use for navigation. The object of the manual is to present in a convenient form for pilots all information which might enable them to take the fullest and best advantage of these charts with the help of really very simple methods of air navigation.

At present (1938) the following are the aeronautical charts published by the Coast and Geodetic Survey :—

Sectional Charts, of the entire United States, in 87 sheets ; scale of 1:500 000.

Regional Charts, to cover the whole country, in 17 sheets ; scale of 1:1 000 000.

Radio Direction Finding Charts of the entire United States, in 6 sheets ; scale of 1:2 000 000.

Aeronautical Planning Chart of the United States (Chart N° 3060*a*) ; scale of 1:5 000 000.

Great-Circle Chart of the United States (Chart N° 3074), at approximately the same scale as Chart N° 3060*a*.

Magnetic Chart of the United States (Chart N° 3077) showing lines of equal magnetic variation ; scale of approximately 1:7 500 000.

Chapter I deals with chart reading, whether of the conventional symbols used in charting the details of the terrain or of the data and information inserted which refer chiefly to air navigation.

Chapter II gives practical information for cross-country flying, the use of landmarks, steering a range, marking distance along the plotted route, marking time intervals, folding the charts. etc.

Chapter III deals with air navigation by dead reckoning and the various problems it involves when adapted to charts on the LAMBERT conformal projection, with a few remarks on the use of the route compass and the various corrections which must be applied, the most important being those for wind force.

Chapter IV is devoted to the U.S.A. Radio Range system, the Radio-compass and special Radio Direction Finding Charts.

Celestial navigation forms the subject matter of Chapter V and its fundamental principles are clearly and simply explained. Here also forms for computing the line of position are given ; tables annexed to this chapter show bubble sextant corrections to be applied to observed altitudes and include astronomical tables for the Sun and Moon, for instance, for 1938.

Chapter VI : *Meteorology* — covers the organisation of the United States Airway Weather Service and the principles of use of Weather Maps and forecasts.

The second part of the publication, containing Chapter VII, offers a series of practical examples of air navigation problems, in particular that of correction of compass heading during flight.

The series of diagrams near the end of the volume insure the rapid solution of speed and distance problems, those of drift and of the determination of ground speed. The last few pages contain in abridged form the navigational and azimuth tables of Lieut. Arthur A. AGETON which have been extracted from H. O. Publication N° 211 of the U. S. Hydrographic Office.

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