



BY JAMES E. TERPSTRA

When you think of IFR charts, approach procedures, MEAs, MOCAs and the myriad of other associated acronyms, you hardly think of the type of reading material you would snuggle up with near a fireplace on a cold, winter evening. No one would confuse "Fate is the Hunter," "Overflight," or "Bombs Away," with the legend pages of the Airway Manual!

This series of articles is written so that pilots can get the most value from their Jeppesen Airway Manuals.™ Most of the charts and symbols are very familiar, because you use them on every trip. Other pages are read less often than the telephone book.

When using an IFR service, all materials can be lumped into one of two categories—enroute or terminal. The enroute operations use low altitude enroute charts, high altitude enroute charts, area charts, or RNAV/GPS enroute charts. Terminal operations normally use approach charts, standard instrument departures (SIDs) (soon to be called departure procedures (DPs), and standard terminal arrival routes (STARs). The opening subject of this series will be enroute charts.

## Enroute Charts

The first enroute charts used by most pilots are the low altitude enroute charts which portray the Victor airways. These low altitude airways are used in the airspace between the minimum usable IFR altitude up to 17,999' MSL. The high altitude enroute charts display the Jet airways, which begin at 18,000' MSL and proceed up through FL 450.

To cover the entire United States with low altitude enroute charts, there are 52 charts, even though a subscriber to the full US coverage doesn't get every one of the 52 charts. These charts are labeled at US(LO)1/2 through US(LO)51/52. It would be simple to design a chart series to cover the entire United States if our population were distributed equally throughout all the geographical coverages. Unfortunately, certain "hot spots," such as New York City, Miami, Dallas, and Los Angeles, attract large masses of people. These centers also require large masses of VORs and airways, condensed in small areas. Because of

# The Chart Clinic – First in a Series

the unequal distribution of facilities, the enroute charts use different scales for chart depiction. Most of the scales used for the US are 1" = 10 NM, although a few of the charts use the scale of 1" = 20 NM. But, let's not get too academic. The real reason for mentioning scale is a reminder that when "eyeballing" distances on charts, an inch may represent five minutes on one chart and two and a half minutes on another chart. This can be developed into a "rule of thumbail:"

*Assuming your aircraft flies 300 knots, each nautical mile goes by in .2 minutes. This means that a "thumbail" measurement on the 20 NM scale chart takes 3 minutes; on the 15 NM scale, a "thumbail" takes 2 minutes; on the 10 NM scale, a "thumbail" takes 1.5 minutes. Even though the distances are printed on the charts, there are many times when it is nice to know quickly how far an airport is off an airway, or your time to an intersection.*

## Chart Layout

A large 8 1/2" x 11" foldout page in the front of each enroute chart book shows the layout of the low altitude enroute charts. An excerpt of this illustration is also on the front panel of each enroute chart. The chart outlines shown by heavy lines indicate the geographical location of the chart.

The shaded areas found on the front panel are used to depict the locations where area charts are provided. Because of some of the "hot spots" mentioned earlier, it is necessary to provide area charts with a larger scale to show more detail with less clutter in some of the major terminal areas. There are 18 area charts in the US for these "hot spots," using the scale of 7.5 NM to the inch on most charts.

Area charts are considered enroute charts and therefore are located with the enroute charts in your shipment. When you receive an Airway Manual service, however, we recommend that each area chart be removed from the enroute chart location and filed with the appropriate city.

This keeps the area chart near the approach charts, SIDs and STARs and provides a better terminal package when operating to or from large airports.

## Revision Cycle

If you owned your own VORTAC station and found when tuning to its frequency that you were receiving interference from a neighboring VORTAC, your first reaction would be to change your neighbor's VORTAC frequency (or your own), effective tomorrow. However, that wouldn't allow enough time to distribute the new VORTAC frequency to all users of the national airspace system.

To solve this type of problem, the International Civil Aviation Organization (ICAO) member nations have agreed that at least 42 days of advance notice will be given when major aeronautical changes are made. Not only is the advance notice required, the effective date must fall on "day 1" of a 28-day cycle.

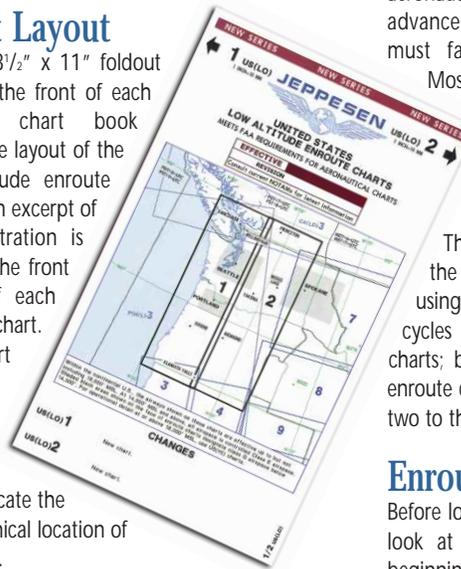
Most of the 184 ICAO nations have agreed to this same cycle. Changes to the enroute charts are effective 0901Z on "day 1," which always falls on a Thursday.

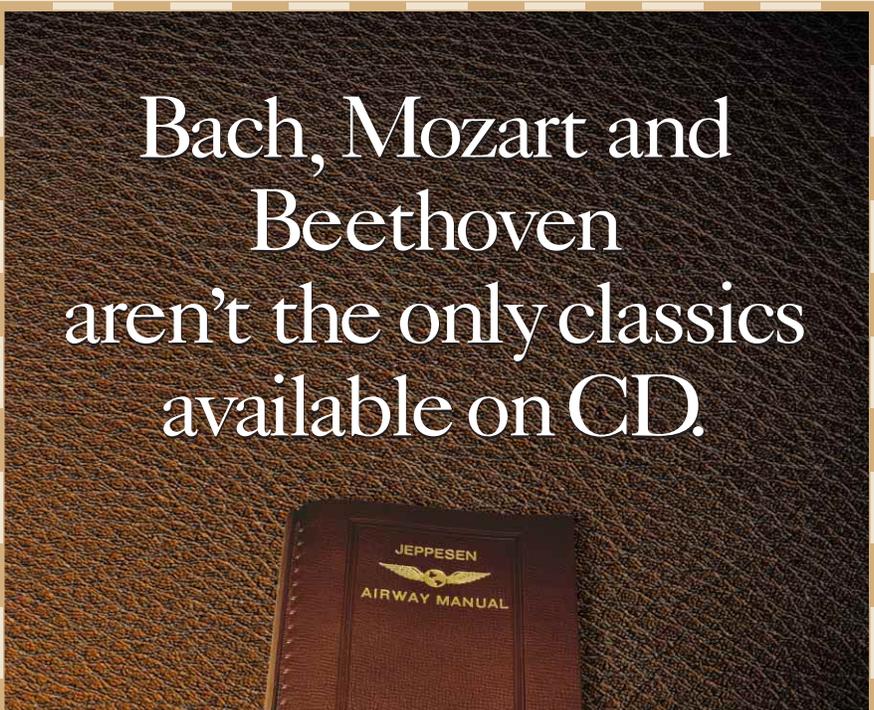
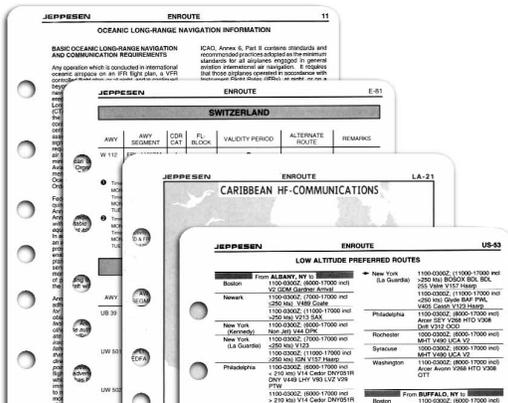
The high and low altitude enroute charts in the United States and Canada are revised using every other 28-day cycle. During some cycles there are no changes to the enroute charts; but even if no changes are made to an enroute chart, it is reprinted and distributed every two to three cycles.

## Enroute Text Pages

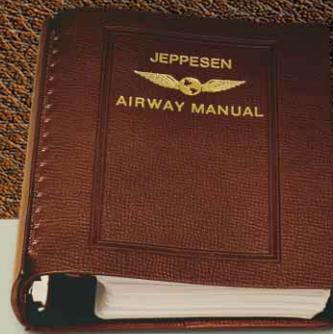
Before looking at the enroute chart symbols, let's look at some of those "front" pages at the beginning of the enroute manual. Each text page has a name centered at the top indicating the section to which it belongs. These names match the tab pages, which are used as dividers. In addition to the section name, a page number is found in the upper left or right corner. If the page number is "US-8," for example, that page would be found only in the United States Airway Manual. If the page number is not prefixed with letters, then that page is an international page and is included with all Airway Manual subscriptions.

When studying the legend pages and chart symbols, it helps if you understand that they are international in nature and description. This technique allows US pilots to use international charts and non-US pilots to use US charts without





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learning new symbols or abbreviations. For example, the letters "CTR" are used to indicate a control zone rather than the Letters "CZ" which seem to make more sense. The letters "CTR" are the official ICAO abbreviation for control zone.

Other pages found in the front of the enroute chart binder include:

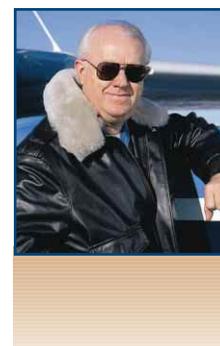
- Air Defense Identification Zones
- Florida Keys Free Area
- In Flight Weather Advisory Reference Locations
- Stratification of United States Airspace System
- High Density Traffic Airports
- Preferred IFR Routes
- Tower Enroute Control (TEC) City Pairs

The list above is a reminder to refer to those pages occasionally. This will help you keep current on some of the seemingly "trivia" items that have been forgotten since ground school days.

Another important section is the "Chart NOTAMS." The Chart NOTAMS are included behind their own tab. These pages are revised and reissued every two weeks. Pertinent NOTAMS (longer than the daily NOTAMS) in the national airspace system are included in the revision notice pages. The NOTAMS listed in the enroute section are appropriate to the enroute charts and are listed by the chart on which they are found. Notices of facility shutdowns, changes of frequency, and temporarily unusable nav aids are

included in the revision notice. Changes to these pages are indicated with a large arrow on the left side of the NOTAM information. *These pages should be reviewed before every flight.*

Even though the legend pages aren't recreational reading, we recommend that you spend a few hours on the next layover reading those "enroute" pages.



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