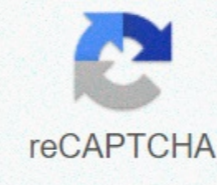




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Jeppesen star chart symbols

Instrument procedural charts are not the only jepsen domain (currently a Boeing company). Various government agencies and private companies have produced competing charts for decades. However, Jeppesen (Jepp) charts the gold standard in the Rules of Flight Instruments (IFR) method publications for the world's turbine aircraft operators over. They have always provided detailed textual information and complex graphic images inherent in such ways in well-organized formats that pilots appreciate. While a slight tweak to regular basic formats has occurred over the years, major redesigns have been rare. However, times are changing and traditional paper charts are now mostly planted by electronic flight bags (EFBs), various tablet applications, and even on board multi-functional displays (MFDs). The full gamut of chart requirements can now be neatly stored on such portable computer devices and/or installation. The benefits of quick electronic revision and pound paper removed from the cockpit cannot be overstated. But charts designed in the age of paper and ring binders sometimes suffer from less-than-ideal formatting when viewed on modern MFDs, EFBs or tablet devices. This is just one of the major issues that Jepp paid for in his recent redesign of the SID/Star chart; a project that is now a few months into the two-year rollout stage. Coming to a device near you I first became aware of the newly formatted Jepp SID/STAR chart on a January flight to JFK New York just two days after its introduction. That there had been a formatting change was immediately obvious, but the extent of the changes was less noticeable while completing the work of a complex star to one of the world's busiest airports. Further research was definitely arranged. The new format first appeared in the U.S. in the revised cycle January 13, 2017, but only at five U.S. airports - Chicago O'Hare Int'l (ORD) and Midway Int'l (MDW) and New York City's Big Three from Newark Liberty Int'l (EWR), La Guardia Airport (LGA), and Kennedy Int'l (JFK). During the remainder of 2017 and 2018, the new format will increasingly be introduced across the company's global database of nearly 20,000 SID/STAR procedures. Jeppesen has also already applied the new format to several airports outside the U.S., and for familiarly and educational purposes. One aspect of the transition that Jepp is committed to is ensuring that the charts for a given airport will be updated all simultaneously to avoid having a combination of new and old formats at a single airport. Undoubtedly, with each subsequent revision cycle, your chances of facing the redesigned SID/STAR chart will increase (Fig 1). Figure 1: FLOSI3 RNAV was arriving in Newark, New Jersey (KEWR) in the initial category of sid/star chart, which was released in the new The capabilities of displaying the ship itself are one of the biggest changes That Jepsen has made to the use of a template to scale depicted. This change is not simply a matter of making the layout map more user-friendly. Of course, the distances between fixes, navies, periods and ground/blockages are much more meaningful to be scaled back to scale. However, the scale design also allows modern electronic charts to resize the aircraft symbol moving on the chart. Anyone who has used this feature on electronic maps on the track or approach pages knows the advantage of situational awareness it provides. Obviously, the software used for electronic charts must combine your aircraft capabilities, along with some kind of input navigation source currently positioned (and appropriate certification, when/where required). With that tool in place, the new scale format of the SID/STAR Jepp chart is just the kind of safety boost that pilots crave. As with approach pages, there are situations that prevent the scale image of some parts of the chart. In such cases, the non-scaled (s) section will be marked with a dash and not labeled to scale. Consolidating text data when looking at a paper SID/STAR chart, at least in most cases, the whole chart is in front of the pilot when referring. When using electronic means of viewing charts, it's not always the case. Many tablets and EFBs allow easy zooming, panning, and pinching of charts to make viewing easier than one area versus another area (a feature that many pilots appreciate with aging vision). The problem this can cause is that critical text data, limitations, and/or limitations are often out of sight and forgotten. Or, for mention, the pilot must pan and swipe while searching for relevant information that may be distributed around the edges, corners, or in otherwise sloppy areas of the chart. To alleviate this problem, Jepp's new format declutters by consolidating as many text data as possible into a single panel on the edge of the chart, often on the right side of the chart. It allows locations to be faster than information initially and eliminates the need to search multiple locations to collect all data. While the briefing bar that Jepp users are already familiar with remaining, even it has been aligned with always with the orientation of their method, which has always increased the case in the past (Fig 2). Figure 2: The departure of NTHNS4 RNAV for New York's La Guardia Airport (KLGa) is one of the current examples utilizing the new standard format of consolidating text data along the right side of the chart. Also note in this diagram is the apparent split of the MSA circle into two quadri columns, separated by 010°/190° bearings to the LGA's VOR. Jepp's Top Ten List Jeppesen's press releases and online Sources point out that the new format was produced through operational risk assessment (ORA), pilot research, customer feedback and testing of human factors to improve awareness of the situation, reduce head down time and increase safety. They highlight the ten main bullet points of the redesign. Other minor changes were incorporated (as noted elsewhere in this article). Topography: Topographic information with color code is now included. The image is similar to the pages of Jepp's approach, using a mutant color palette that clearly distinguishes the pitch rise without interfering with the readability of overly critical data, such as height limits and period information. Large or prominent bodies of water are also shown. The diagram contour intervals scale is also depicted when multiple height bumps dictate. As depicted in the pages of Jepp's approach, the highest point in the chart (it's man-made obstruction or natural earth) using a bold, black, high point arrow. Grid Minimum Off-Route Heights (Grid MORAs): A subtle grid of latitude/longitude lines now cover the charts similar to what instrument pilots are used to seeing on enroute charts. Inside each rectangle making the grid is a gray number indicating the minimum off-track height in that section (on hundreds of feet). The height should ensure 1,000 feet of vertical separation from barriers and terrain (2,000 feet in mountainous areas). Height limit: For easier and faster identification, height limits are now recommended to paint the blue code and use a less sloppy format to show mandatory, minimal, max or height. Gone are the words on, at or below, at or above, between and recommended, and they have been replaced with the same standard ICAO symbol used on the Jepp Instagram approach page. A line above and below height indicates mandatory height, while an up or down line represents heights at/above (min) or below (max) respectively. High-altitude windows (between heights) are depicted with stacked heights above and below sandwiched between minimum and maximum lines. Recommended heights are provided without minimum or maximum lines. Heights are expected or presented as assigned by the ATC still using adjacent waiting or by ATC notations (Fig 3 and Table 1). Speed limit: For easy reference and to avoid confusion with height limit, the speed limit now paints the MAGENTA code, both in the method header (title) information and inside the display chart layout (Table 2 and Figure 3). Minimum Section Height (MSA): MSA now over-views the chart layout, rather than being depicted in a separate box, off in one corner. The MSA circle is too much color magenta code, as the bearings separate the section from the MSA circle. The highlands are depicted inside each section. The center point of the msa circle definition is identified (both at its point and in the MSA circle), as is the diameter of the MSA when it differs from the 25 NM standard. Minimum heights are expressed in full numbers, but are rounded up to the next 100-foot increase (Fig. 2). Nav aids: Navaid symbology has been changed to conform with Jepp enroute charts and ICAO standards. These easily recognizable symbols, along with the deletion of lat/long-related information, contribute to Jeppesen's efforts to reduce the chart. Since modern GPS and FMS databases are generally programmed through navaid two or three-letter IDs and have already said latitude/longitude related to navaid stored, the information certainly contributes to the clutter that modern IFR pilots rarely use (if ever) in the terminal environment. Holding: Published image hold that is based on sea mile distances or DME foot lengths already depicted to scale, while keeps based on flight time will not be referred to as scale. Maximum speed of keeping on top of text information to keep noted. It still contains (where appropriate) the minimum and maximum hold height, MHA and MAX, respectively below the speed image. A hint by the ATC will appear appropriately. SECONDARY IFR AIRPORTS: Not included in previous formats, these airports are now depicted in subtle grey, similar to how they appear on the pages of Jep's approach. In the United States, when a SID or STAR unit method serves multiple airports, airports also serve to be portrayed as BLUE. Waypoints: Latitude/longitude coordinates associated with the waypoint names depicted have also been removed to disintegrate the chart layout view. Scale bar: It only feels good that since these redesigned charts are depicted to scale, that a hint will be added to the specific scale used. Along the left or top edge of the chart, depending on the orientation of the chart, a scale bar provides inch-to-NM scale information. Shape Cutting Clutter 3: Seattle Tacoma International (KSEA) HAWKZ4 RNAV Entry displays many of Jepp's major formatting changes in a single chart. There are blue height limits in minimal, inter, and mandatory versions. Several magenta speed limits are displayed, as well as several MSA sections (also in magenta). The terrain and characteristics of water, scale strips and areas drawn not to scale are obvious, as well. Table 1: Examples of different height limit symbols in the new Jepp SID/STAR format. Table 2: Compare side by side from old and new formatting for both height and speed limits. In all, Jeppesen has done an admirable job of decluttering his SID/Star charts. Transfer text data from random insert inside layout view to a dedicated one The framework has created a far cleaner presentation of critical pathways, altitude and speed information. Deleting additional latitude/longitude data also really helped to clean up the layout view, especially in the complex SID/star that depicted half a dozen or so fixes and nav aids. In his quest to declutter, Jepp even went so far as to shorten his naming conventions for the procedure. Now, instead of spelling out names in long form, they are presented in a shorter (but equally easy to read) form, along with proper flight plan formatting in parentheses. FOR EXAMPLE, THE ARRIVAL OF HAWKZ RNAV FOUR APPEARS AS THE ARRIVAL OF HAWKZ 4 RNAV (HAWKZ). HAWKZ4). Night and right-sized mode was a problem presented to the initial accepters of the electronic night observation chart. The mostly white charts were too bright to observe the night and the visibility on the night was negatively affected. Finally, the software evolved to combine night mode that basically worked on the principle of negative imaging - swapping bright white areas from chart to black and black text. The results were generally far easier on the eye at night. Since Jeop's new format is designed with electronic reading in mind, their chart night mode looks a little more refined. While negative imaging is still a fundamental principle, blue height limits and magneta speed limits remain unchanged. But Magenta MSA data changes to AMBER. The author note some slight color changes in night mode across various electronic chart devices and online jepp samples (Fig 4). Figure 4: Shot the screen of the HAWKZ4 entry in night mode. Note that while speed limits are still displayed in magenta, the MSA section typically becomes magenta to amber. The earth and water features remain equally obvious in night mode, as does the Contours distances scale. Finally, charts no longer need to match a global size model meant to coincide with being placed in a binder; Instead, redesigned charts can be customized enough to accommodate image-to-scale to the most user-friendly way. This can lead to portrait or landscape orientation, square, or variations of each. Of course, with electronic chart viewing software, this is a non-issue, as charts can be rotated into any orientation and panning and zooming can be used if necessary for optimal viewing. More to learn Jeppesen is now creating a wide variety of online learning resources. You can learn more, view videos, work through presentations and e-learning documents, and participate in interactive training (including quizzes to test your knowledge and understanding afterwards) through: Note: All graphics are used with permission from Jeppesen Not intended for navigation use. Copyright 2017, Matthew McDaniel. The first publishing rights were granted to King Air magazine through Village Press. All other rights reserved by the copyright holder. Holder.

