

JEPP'S BRIEFING



BY JAMES E. TERPSTRA
SR. CORPORATE VICE PRESIDENT, JEPPESEN

As you fly over the the third world country below you, visualize the conditions for the local residents. The roads have potholes large enough to swallow your car, the telephones usually don't work, the electricity is sporadic, finding clean water is virtually impossible, and the local hospital has no medicine. And - the local aviation authorities are competing for the same funds to build the aviation infrastructure. The Civil Aviation Authorities need funds to install VORs, NDBs, and ILSs. They also need funds to employ airspace specialists to create and maintain the airway system, as well as the instrument approach procedures.

These conditions are not imaginary. They are being reported by the International Air Transport Association (IATA). IATA talks about times when you file a flight plan and the coordination is so inefficient that you may arrive at your destination before your flight plan does.

These conditions help to explain the large amount of a gray color that represents non-controlled airspace on some enroute charts. Over Africa, as an example, 80% of the airspace is not controlled. Radar coverage, where it exists, is mostly limited to the terminal areas around major cities.

Worldwide Symbolology

After flying IFR and VFR in the United States for many years, most of us are very familiar with domestic chart symbols and terminology. With the increase in the range of jets, the easing of world political situations, and the tremendous increase in companies doing business overseas, international flying is becoming more common for pilots. This article concludes the series on enroute charts with a look at some differences on Jeppesen charts printed for use in areas other than the United States.

As mentioned in previous articles, the symbols and abbreviations on the charts in the United States lean toward using international symbols. The charts were designed in this manner so you that can fly worldwide without experiencing major chart-reading difficulties after you leave the U.S. borders.

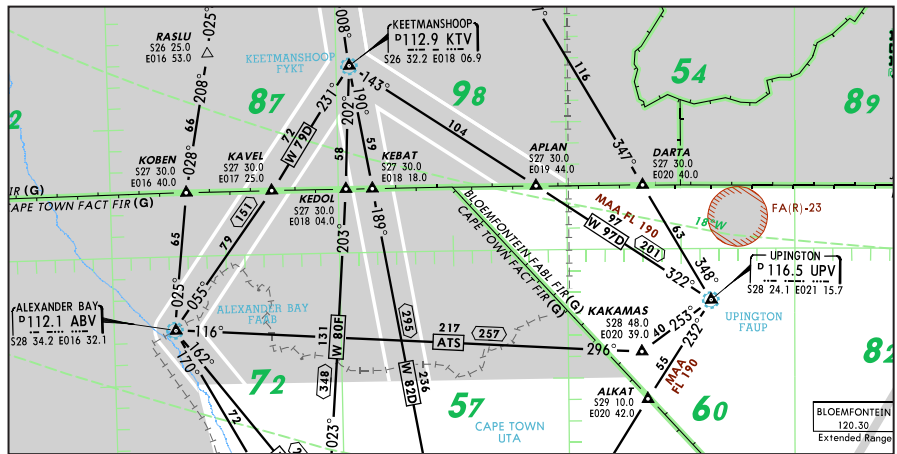
Chart coverage spans the entire world—except for Antarctica. Chart service is available even for such places as Togo, Gambia, Russia and the Peoples Republic of China. The chart symbols are the same, whether you are flying near Chicago, Mazar-I-Sharif, Abidjan, Bamako, Tiruchchirappalli, or Kuala Lumpur.

For the beginning of the foreign chart discussion, refer to the first illustration, which is an excerpt of the African high altitude chart that is north of Cape Town, South Africa.

Airway Controlled Airspace

In North America and Europe all airways are surrounded by controlled airspace, which means that IFR traffic separation is provided by ATC. This is not true, however, in all parts of

The Chart Clinic – Twelfth in a Series



the world. Note the airways near the Alexander Bay, Keetmanshoop, and Upington VORs. The Whiskey 97D (W 97D) airway on the 322 radial from the Upington VOR begins in controlled airspace which is depicted by an area that is completely white. After passing the Aplan intersection, the airspace around the airway is depicted in gray. On each side of the airway, a thin white line parallels the airway to the Keetmanshoop VOR. The white lines on both sides indicate that W 97D is an advisory route only and *no traffic separation is provided*. Air traffic control provides advisories of other *known* IFR traffic along an advisory route. The letter "D" used as a suffix for the airway identifier indicates there is advisory service only on the airway.

Northwest of the Upington VOR, an airway (W 89F) proceeds north on the 348 radial. After passing the Darta intersection, the airway is surrounded by a gray color that indicates no air traffic control. Even though these airways are used in the high altitude structure, they are not in controlled airspace, and the ground infrastructure does not support air traffic control. On this airway, there is no separation from other IFR traffic by ATC. The letter "F" used as the airway identifier suffix indicates the availability of flight information, but not air traffic control separation.

Because of the lack of air traffic control over Africa, IATA has established "In-Flight Broadcast Procedures" (IFBP). This note is included on the enroute charts in many locations with an explanation of the procedures. Even in cases where air traffic services are provided, they are frequently on HF and the quality of the radio signals is very difficult. So, the IATA procedures are in effect even when in an ATC environment in Africa.

The IATA procedure is essentially a transmission "in the blind" for all other traffic in the area. All aircraft in the area

monitor 126.9 MHz which contributes to the "party line" of awareness for all aircraft. The amount of traffic in South Africa is increasing and the frequency is starting to become so congested that IATA is working on developing a second frequency. As the note on the chart states, more information on the IATA procedure is found in the Enroute pages A-31 and A-32.

IATA In-Flight Broadcast Procedures (IFBP)

In addition to normal ATS reporting procedures, IFBP in English on 126.9 are in use over most of the African continent in the following format:

"All stations this is (call sign)

Flight Level

Northbound (From - To) via (airway)

Estimated Position At (UTC)

.... (call sign)

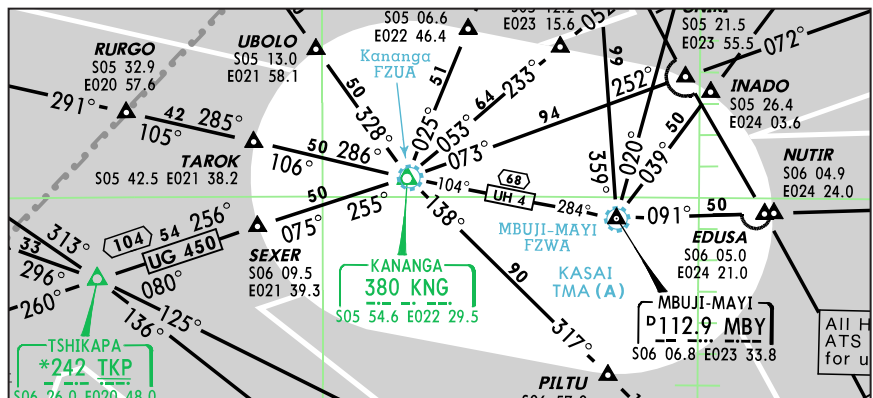
Flight Level "

For more details regarding the changes of cruising level, collision avoidance, Transponder and TCAS operation refer to text page Enroute A-31/A-32.

High and "Both" Altitude Airways

Many of the airways throughout the world are not designated as low altitude or high altitude airways, and can be considered as "both" altitude airways even they are not officially designated that way. The airways in the first illustration are Whiskey (W) airways, do not have a designation of either high or low, and can be used in either of the altitude structures. The ATS route with no identifier can also be used in both high and low altitudes.

In most locations in the world, the designation of high altitude airways is created by using the letter "U" as a prefix to a letter which is pronounced with the phonetic alphabet. The airway between the Tshikapa and Kananga NDBs is labeled UG 450 and is referred to in ATC com-



munications as Upper Whiskey 450. Proceeding east from Kananga, the airway is Upper Hotel 4.

Low Frequency Airways

The navigational facilities that are used to form part of an airway structure are enclosed within a shadow box. The Kananga NDB, therefore, has a shadow box enclosing its frequency of 380 kHz, the three-letter identifier KNG, and the Morse code identifier.

When an airway is formed by an NDB, the magnetic bearing from the NDB station is provided adjacent to the NDB similar to a VOR airway. When an airway is formed by an NDB, the course is a *magnetic bearing from an NDB instead of a radial*. The UH 4 airway east of Kananga NDB is formed by the 104-degree bearing from Leon and proceeds to the Mbuji-Mayi VOR via the 284 radial from Mbuji-Mayi.

By looking at the Sexer intersection (west of Kananga NDB) you can see that the latitude and longitude values have been included on the chart. All intersections and navaid facilities which are used as part of the high altitude route structure have the latitude and longitude included. These were originally included for aircraft equipped with INS systems, but are now a good way to cross check between the coordinates on the chart and in the FMS or GPS databases to ensure you are going to the place you think you are.

On some high altitude enroute charts, airports are depicted with their International Civil Aviation Organization (ICAO) identifier. The ICAO identifier for the Kananga airport is FZUA. The first two letters, FZ, are the two letters for the ICAO identifier for the country of DR of Congo. For countries that have two letters for their ICAO identifier, all airports in the country will begin with those two letters. This is why it is virtually impossible for the IATA and the ICAO identifiers for airports to be similar in most countries.

In the first illustration, there is a restricted area north of the Upington VOR designated as FA(R)-23. In most countries, the (ICAO) identifier is included with each restricted area. In this case, the letters "FA" represent the two-letter ICAO identifier for South Africa. Following the ICAO identifier is the letter "R" indicating restricted area, and the restricted area's number designation.

West of the Upington VOR is a straight line with small ticks on alternating sides. This is the designation of the boundaries between Flight Information Regions (FIR). On the northeast side, the Bloemfontein FIR (FABL) is the air traffic control, to the extent to which it exists. On the southwest side, the Cape Town FIR (FACT) Flight Information Region provides advisory service for traffic.

Airport Controlled Airspace

Many types of controlled airspace surrounding airports in the United States have a direct parallel to the airspace surrounding airports outside the U.S. This makes flying in many countries easier.

Control zones outside the U.S. are indicated by the letters "CTR." There are many countries throughout the world that have not yet converted to the ICAO standard for airspace designations such as class A, B, C, etc.

Note that Sexer intersection is a compulsory reporting point which is indicated by the solid, filled-in intersection symbol. The Sexer intersection is on the TMA boundary for the Kasai TMA (terminal control area). The ICAO definition for terminal control area is a control area normal-

The Greatest Breakthrough Since The Sound Barrier

New format. More value.

Jepp Charts are more pilot-friendly than ever. Our new "Briefing Strip" format makes approach charts better top to bottom. Innovative multicolor Enroute charts reduce clutter and make the information you need easier to find. And JeppView gives you CD-ROM chart convenience. Jeppesen continues to innovate and invest in charting. You'll find our charts work harder, smarter and offer more value than ever.

You have to see it to believe it.

JEPPESSEN.
Making Every Mission Possible.

www.jeppesen.com
Western Hemisphere
1-800-894-9478
303-784-4274
Eastern Hemisphere
+49 69 96 12 48 51

ly established at the confluence of ATS routes in the vicinity of one or more major aerodromes. The letter "A" in parentheses indicates this airspace as class A airspace. Since the airspace surrounding the Kananga and Mbuji-Mayi airports is controlled airspace, the area around the airports is depicted as white which is the international designation of controlled airspace.

This concludes the series on enroute charts. Next month will begin a discussion of terminal charts.



James E. Terpstra is senior corporate vice president, flight information technology at Jeppesen. His ratings include ATP, single and multi-engine, airplane and instrument flight instructor. His 6,000+ hours include 3,200 instructing. For comments, please Email: JimTerps@jeppesen.com