



APPROACH (APP)

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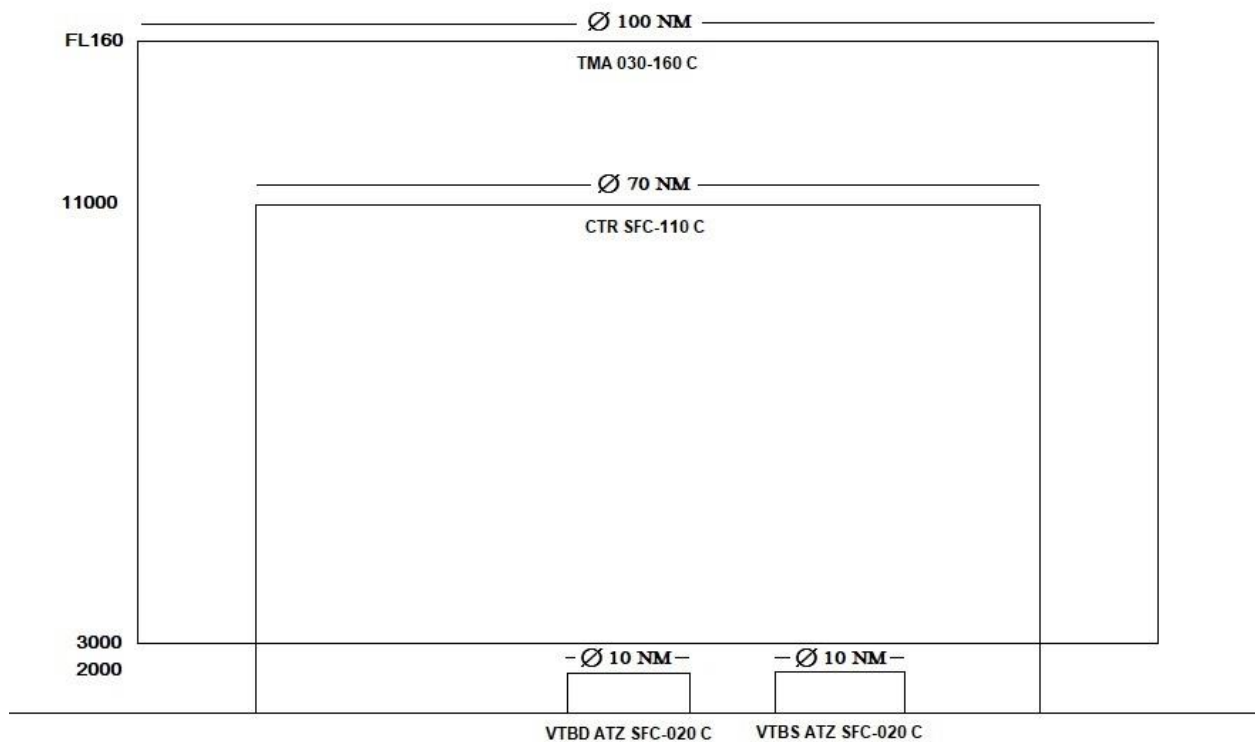
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1. General

The Approach controller has a very important function. He needs to bring arriving aircrafts in an order to reach the final approach to the specified runway without having problems. To do this it is necessary to organize separation horizontal as well vertically. The same of course for departing airplanes.

Separation means that any aircraft keeps a certain distance to another one in horizontal and also vertical distance. For the horizontal distance inside the TMA there is a limit of 5 NM. The vertical distance to keep is 1000 feet.

The airspace, the controller is responsible for, is called the TMA (Terminal Maneuvering Area) and the CTR (Control zone). The picture shows the TMA structure for the Bangkok TMA. The center of TMA and CTR is the position of Bangkok VOR (BKK).



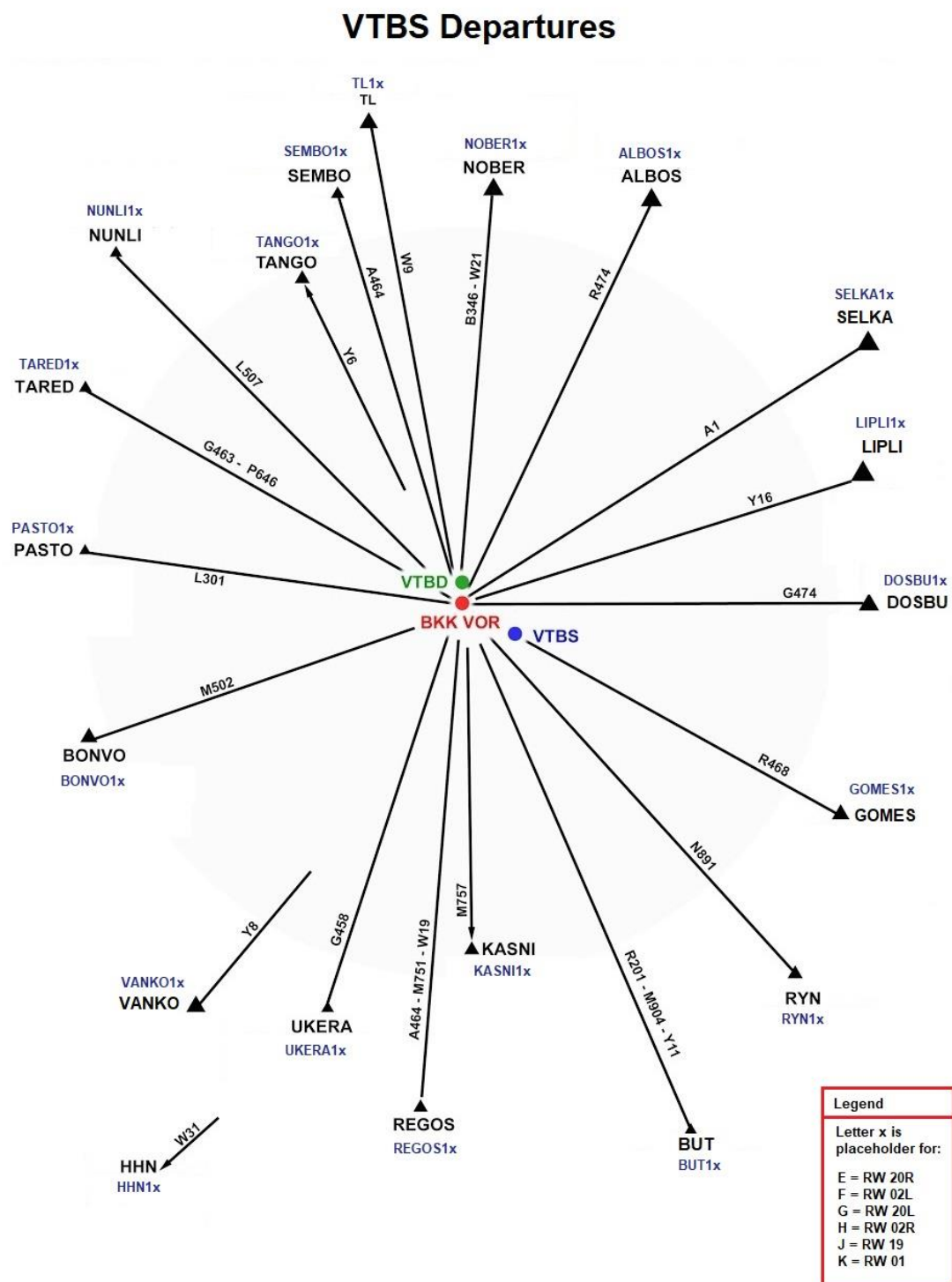
Schematic for the Bangkok TMA.

The TMA includes next to Suvarnabhumi (VTBS) also the Don Muang airport (VTBD) what was in the old days the only airport for Bangkok. Suvarnabhumi is in operation since the year 2008.

1.1. SID's (Standard Instrument Departure)

SID's are defined routes describing the route from the runway to the first airway according to the flight plan. The fix where to enter the airway gives the SID its name. The definition includes also the flight altitude that is to keep on several way points, the so-called vertical profile.

The Bangkok TMA has in total 20 transition points they connect each of the two airports to different airways in almost any direction.

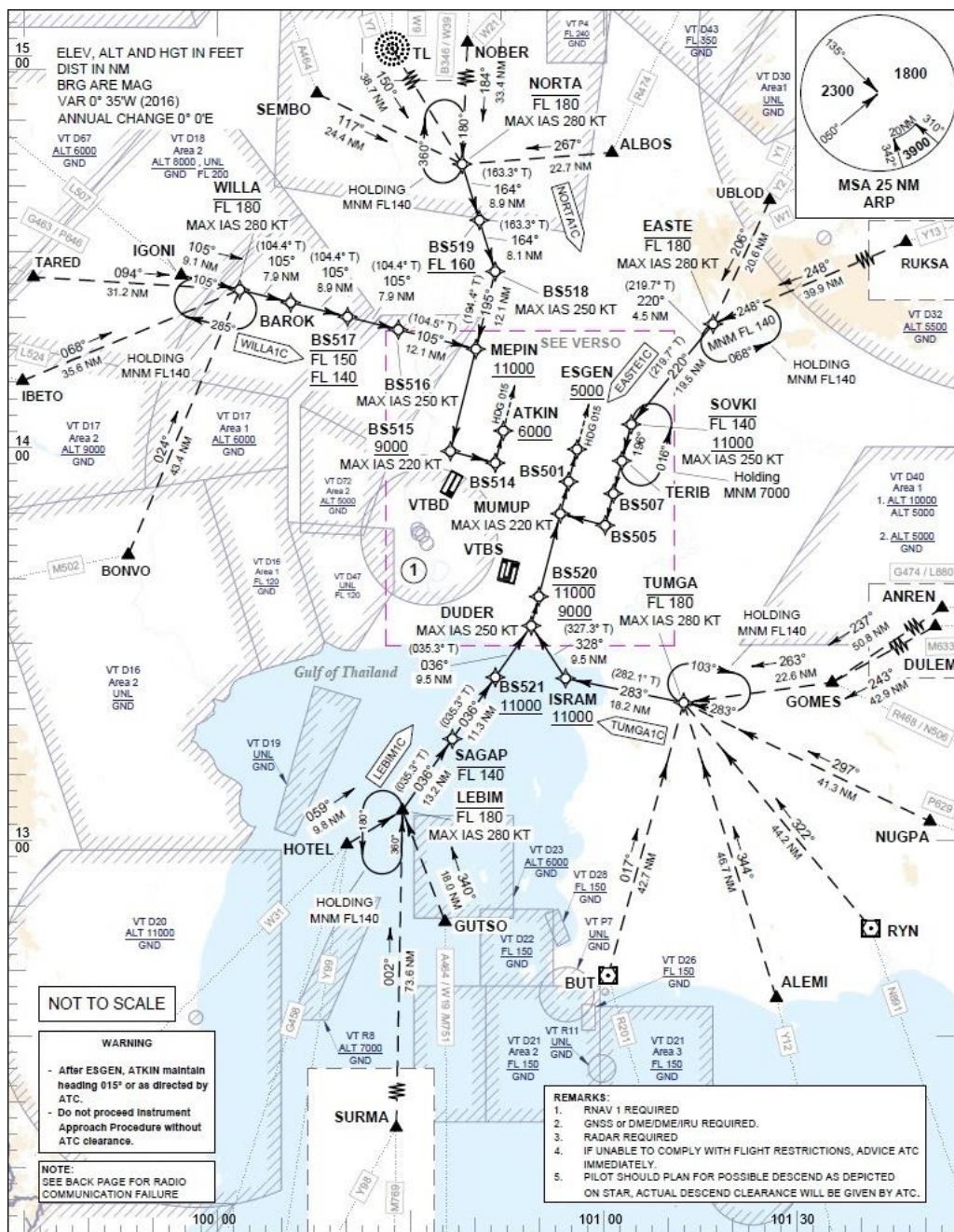


SID's for both Bangkok airports.

As already mentioned, the departures name is given from the fix that connects the departure route to an airway. Actually there is one number and one more letter behind that name. The number is more or less a version number describing updates. The letter behind specifies the runway that the aircraft is using for departure at the airport. Each airport has two runways with together 4 possible departures.

1.2. STAR's (Standard Terminal Arrival Route)

STAR;s are routes describing a flight path from the terminal point on an airway to the active runway at the airport. Different from SID's the name of the STAR is given from a fix, that is defined as a kind of collection point for arrivals via some different airways.



Sample of STAR's for VTBS, runways 19, 20L and 20R.

This way of organization makes it easier, to keep the incoming traffic under control. As on a SID, where the traffic leaving from the runway is more or less splitting to some different airways, in STAR's the traffic from different airways is slowly concentrating to just one runway.

The picture shows the STAR's for VTBS, runways 19, 20L and 20R. Actual charts for almost all SID's / STARs in Thailand are available on [CAAT - Published eAIPs - Thailand](#).

2. The Practice

2.1. Departing Aircrafts

After the tower controller handed over the aircraft to the approach controller the pilot will call: "Good day Bangkok Approach, passing 2000 ft, Thai123".

Approach will answer:

"Thai123, Bangkok Approach good day, identified in 2500 ft, climb via SID to FL160, report FL140".

The pilot confirms:

"Climb via SID to FL160, will report FL140, Thai123".

A few explanations to the instruction.

Identified in or at an altitude will give the pilot a kind of confirmation that the ATC really has detected his plane on the radar screen and is not talking only to a call sign.

Climb via SID means that the pilot has to follow the defined route and as well all the restrictions for the altitude on several points of the route.

FL160 is the upper border of the Bangkok TMA, so the controller can give the clearance only to the limit of the airspace he is controlling.

Flight level 140 is here a virtual border and when the pilot reports, the controller is reminded to hand the aircraft over to CTR or send it to UNICOM that the plane is able to continue climbing without an unwanted level out at FL160.

When the plane passes FL140 the pilot calls:

"Passing FL140, Thai123".

Controller:

"Thai123, contact Bangkok Control on 132.1".

As alternative if CTR is not present:

"Thai123, monitor advisory 122.8".

With the "Climb via SID to ..." instruction are some options possible in order to lift some limitations (altitude and speed) during the climb phase. Details have to be checked.

2.2. Arriving Aircrafts

Arriving aircrafts will be handed over from CTR to APP about one minute before they enter the TMA. The pilot will call:

"Good day Bangkok Approach, at DOLNI on FL160, Thai123".

Approach will instruct:

"Thai123, Bangkok Approach good day, identified on FL160, clear TUMGA1C arrival, expect runway 19L, descend via STAR to 5000 ft, QNH 1012".

Pilot:

"Clear TUMGA1C arrival for runway 19, descend via STAR to 5000 ft, QNH 1012, Thai123".

Like for departing planes the controller uses "identified on ..." to confirm the pilot that his plane is in focus.

Also here are options possible with the "descend via STAR to ..." instruction to lift some limitations given from the original STAR.

The descend to 5000 ft is on this particular STAR the limit, the aircraft should keep on waypoint ESGEN, the last waypoint of the STAR.

Arrived on ESGEN the controller:

"Thai123, turn left heading 220 to intercept localizer ILS runway 19, report established".

Pilot:

"Turn left heading 220, descend to 3000 ft, will report established, Thai123".

The turn to a heading to intercept the localizer should not deviate from the runway heading more than 30°. The real runway heading at VTBS is 195°, so the instruction to heading 220 gives 25°. What is a good angle to catch a localizer.

Remark:

For VTBS the transition from the last waypoint of the STAR to the ILS approach (actually ILS z) on waypoint LEMOS (for runway 19L) is not defined in the charts, so the plane is to vectorize to the ILS. The same of course when aircrafts arrive from the west side. There the last waypoint of the STAR to approach the runways 19 and 29L is WALTZ.

After a while the pilot will report:

"Localizer runway 19 established, Thai123".

At this time it is possible to hand the aircraft over to the tower controller:

"Thai123, contact Suvarnabhumi tower on 118.2".

If no tower is online, then the APP controller will instruct:

"Thai123, continue approach, you are number one".

The landing clearance then can be given from a distance of about 8 to 10 NM from the runway threshold.

3. VFR operations inside the TMA

As ATZ, CTR and TMA are airspace class C, VFR flights inside this airspace are always under control of ATC. For that reason it is also necessary, to issue VFR flights a squawk code that is different from the VFR standard code 7000 in uncontrolled airspace.

Especially in the Bangkok CTR and TMA exist defined VFR routes, which, if possible, should be kept. Those routes already provide a good separation between VFR and IFR traffic.

4. Emergency operations

There are two kinds of emergency situations, the controller has to deal with. One is the radio failure (squawk 7600). For this case there are pre-defined procedures for the most of all airports.

In case that a plane sets the squawk emergency code (7700) inside or already outside the TMA, the APP controller has to act immediately. As soon as radio contact is established, the controller has to figure out, how urgent the problem is and assign a runway for the emergency landing. Depending on the situation, it could be also a runway in the opposite direction with vectors from the APP controller. Up from that time the tower controller must be involved to take care, that the runway is free and any other start or landing on that particular runway is prohibited until the emergency plane is safely landed.

Any other airplanes in approach need to be diverted or to send in holding positions until anything is done.

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