

# INSTRUMENT READINGS™

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Issue No. 2

## OBSTACLE DEPARTURE PROCEDURES

### Part 1

“ATC clears N123XY to ABC airport as filed, climb and maintain 3000, expect 8000 in 10 minutes, departure frequency 123.45, squawk 5432. On departure, enter controlled airspace east of airport on heading 090. Released, clearance void at 1825Z, time now 1820. If not off by 1825, advise intentions by 1830.”

So there you are, at the hold-short line of runway 2, talking with AFSS over the GCO, Hobbs meter running. There is a low overcast at 600 AGL. The airport is an untowered field, at 600 ft MSL, in Class G airspace to 700 AGL. This is your first departure from this field, so you have little local knowledge of terrain and obstacles. You decide to fly the published Obstacle Departure Procedure (ODP) which requires a ceiling and visibility of 300-1 and says climb on runway heading to 2000.

You have your clearance and you have a procedure that will allow you to avoid obstructions. You can make the standard climb gradient, you have the GPS set up on an approach procedure to return to the field if you have a problem on departure, and the approach and departure minimums are below the existing conditions. Your runup was good and checklist is complete. So you're good to go, right?

But wait. To clear obstacles, you have to fly heading 020 to 2000 ft MSL. You will enter controlled Class E airspace at 1300 ft MSL on heading 020. Your clearance said to enter controlled airspace on heading 090. Hmm..... got a problem. What do you do now? Well, the Hobbs is running, two airplanes are lined up behind you, it will take time to try to get any changes made, you figure that not hitting something is more important than making the turn to 090 at exactly the right place, so you decide to go ahead and fly the ODP to completion and turn to 090 when reaching 2000.

So you depart and at 2000 ft, in the soup, you turn to 090 and check in with Center.

“Memphis Center, N123XY, off Podunksville climbing through 2000 for 3000, heading 090.”

“N123XY, Memphis Center, radar contact, make immediate right turn to heading 180 for traffic. Your instructions were to enter controlled airspace on heading 090. Possible pilot deviation. Upon arrival at destination, call Memphis Center at 1-800-555-1212, extension 6578.”

That flight certainly is not off to a good start, is it? The good news is that you didn't hit anything. The bad news is that it sounds like you almost did hit another airplane, by delaying your turn and causing a loss of separation. In any event, you busted your clearance.

Let's back up and examine your alternatives for resolving the conflict between your clearance and the ODP.

1. Fly the ODP to the floor of Class E airspace at 1300 MSL, and then turn right to 090. That complies with the clearance, but you did not complete the ODP and you may not be assured of obstacle clearance. The ODP assumes that you might turn to any direction upon completion, so it has to assure terrain and obstacle clearance in all directions, and the 2000 ft completion altitude assures that, assuming a continued climb at 200 feet per nautical mile or greater. If you were very familiar with the airport area, you might could have determined that there are no obstacles in your direction of flight and that you could have made the early turn safely. But this absolutely requires good local knowledge.

2. Fly the ODP to completion, and then turn to 090. Not good, we have already seen what happened. You violated your ATC clearance. The FARs require that you comply with an ATC clearance or instruction.

3. After receiving your clearance and realizing the conflict, call AFSS again and tell them that you need to fly the published ODP to completion and that you need an amended clearance to permit that. This is a good course of action, it just takes time, the Hobbs is running, and there are two airplanes lined up behind you.

4. Avoid the whole problem by recognizing the situation in advance, that you have an ODP which takes you into controlled airspace, and telling the AFSS on your initial callup that you will need to fly the published ODP to completion. Then verify that your clearance is consistent with doing that. If not, get it fixed then. This, of course, is the proper way to do it.

This hypothetical scenario assumed you were getting your ATC clearance via AFSS and radio relay. The same considerations apply if you contact ATC directly via radio or cell phone, and it is faster and simpler than involving the third party of AFSS in the process.

Sayeth the AIM:

"ODPs are recommended for obstruction clearance and may be flown without ATC clearance unless an alternate departure procedure (SID or radar vector) has been specifically assigned by ATC." (*Read AIM 5-2-6 for more.*)

The Air Traffic Controller's Handbook, FAAO 7110.65, has this to say (para. 4-3-2c):

"(c) At all other airports (*Note: untowered with Class G surface airspace*)- Do not specify direction of takeoff/turn after takeoff. If necessary to specify an initial heading/azimuth to be flown after takeoff, issue the initial heading/azimuth so as to apply only within controlled airspace. "

and

“3. Compatibility with a procedure issued may be verified by asking the pilot if items obtained/solicited will allow him/her to comply with local traffic pattern, terrain, or obstruction avoidance.

PHRASEOLOGY-

FLY RUNWAY HEADING.

DEPART (direction or runway).

TURN LEFT/RIGHT.

WHEN ENTERING CONTROLLED AIRSPACE (instruction), FLY HEADING (degrees)

UNTIL REACHING (altitude, point, or fix) BEFORE PROCEEDING ON COURSE.

FLY A (degree) BEARING/AZIMUTH FROM/TO (fix) UNTIL (time),

or

UNTIL REACHING (fix or altitude),

and if required,

BEFORE PROCEEDING ON COURSE.

EXAMPLE-

"Verify right turn after departure will allow compliance with local traffic pattern," or "Verify this clearance will allow compliance with terrain or obstruction avoidance."

NOTE-

If a published IFR departure procedure is not included in an ATC clearance, compliance with such a procedure is the pilot's prerogative."

On numerous occasions, I have been asked by ATC if the assigned turns and headings are compatible with the local traffic pattern. I have been assigned SIDs many times, and an ODP once. But I have never ever been asked if a heading to fly on entering controlled airspace will allow compliance with terrain or obstruction avoidance procedures. PIC, beware!

There is some debate over my central theme in this article as to whether it is necessary to be concerned about the compatibility between your clearance and a planned obstacle avoidance procedure. One side of these arguments is that the pilot has ample authority to fly an ODP without explicit authorization and that the option for an ODP is an implied part of a clearance (in the absence of assignment of a SID or radar vectors). This is supported by several references:

- the AIM statement referenced above
- the corresponding 7110.65 wording at the end of the extract above
- wording in Section C of the Terminal Procedures Publication (TPP) that is essentially identical to the AIM statement
- FAA Order 8260.46B, *Departure Procedure Program*, which provides policy guidance to procedures developers and chartmakers, and which says “This [ODP] will be considered the default, or basic, IFR departure procedure for a given runway and is intended for pilot awareness and *use in the absence of ATC radar vectors or SID assignment.*” [emphasis mine]
- The *Instrument Procedures Handbook* says “Pilots do not need ATC clearance to use an ODP and they are responsible for determining if the departure airport has this type of published procedure.”
- The IPH also says “If you are not given a clearance for a SID or radar vectors and an ODP exists, you must use the ODP. Additionally, ATC expects you to comply with the published procedure unless the weather at your departure airport lends

itself to a departure under VFR conditions and you can see and avoid obstacles in the vicinity.” [The “must” applies to non-Part 91 operations.]

However, it must be recognized that none of those references are regulatory and do not provide any relief from FAR 91.123(a) which says “When an ATC clearance has been obtained, no pilot in command may deviate from that clearance unless an amended clearance is obtained, an emergency exists,...” Furthermore, there is a difference (at least to me) between flying an ODP in the absence of an explicit clearance to do so, which is clearly permitted, and flying an ODP that conflicts with a clearance, which is clearly prohibited. And all the above references apply to published procedures. If you “roll your own” departure procedure, then clearly your operation does not fall within the referenced guidance.

In my opinion, this issue is confused by seemingly conflicting guidance, regulations, and directives. My analysis of these issues, trying to sort it out, puts me into the second camp: that the PIC has a responsibility to make sure that the clearance and intentions are not in conflict, and that ATC expectations and pilot intentions are aligned. My position is based on:

- FAR 91.123(a), extract above.
- As is evidenced by the 7110.65 extract above, the FAA places a responsibility on controllers to verify the compatibility of a clearance with local constraints and departure procedures. This expresses FAA intent to have pilot procedures and clearances consistent.
- The very mission of ATC, providing separation of IFR aircraft, depends on ATC knowing what IFR aircraft are going to do.

When one receives a clearance “cleared as filed” or “cleared direct”, and neither the flight plan nor the clearance mentions a DP nor contains vectors, it is easy to accept that flying the ODP is not inconsistent with the clearance. Strictly speaking, unless one enters controlled airspace on the direct course, it might could be viewed as a deviation from the cleared direct route. But I doubt that would ever arise unless the deviation was extreme, as could occur when following some of the more demanding procedures. I think the main thing is to make sure there is no explicit inconsistency between your intentions and your clearance. But I see no good reason for not always getting the clearance and planned departure procedure to be consistent. IFR flight is inherently a partnership between pilots and ATC, with shared responsibility for making it work.

Pilots frequently get departure vectors from terminal facilities which have established diverse vector areas, and may not recognize the distinction between that and the clearance issued at other areas to fly a certain heading on entering controlled airspace. In the latter, there is absolutely no terrain or obstacle clearance provided for. PIC, beware!

Many times, when you are departing an uncontrolled field in Class G airspace, ATC will want to give you clearance to a local navaid before releasing you on your cleared route. The clearance might be similar to “N1234, cleared to XYZ airport via direct ABC VOR, then as filed, etc....”. Or, your clearance limit may be the VOR, with clearance for the rest of the route issued after radar contact or later when you are holding at the VOR. In either case, when you enter controlled airspace, your clearance requires that your flight path lead directly to ABC VOR. Again, if you are flying an ODP that conflicts with that flight path, you need to make sure that

you obtain a clearance that is consistent with flying the ODP. The best way is to inform ATC when you are requesting your clearance that you will be departing runway XX and will need to fly the published obstacle departure procedure to completion.

Takeoff minima and departure procedures apply to all categories of aircraft at all performance capabilities. Just because your airplane can climb faster than the standard climb gradient or other published climb gradient doesn't mean you shouldn't observe the minima and fly the procedure. It just means you can fly it more safely.

As always, it is up to the Pilot In Command to assure that the clearance and the procedures to be flown assure the safety of the flight, and are consistent with one another.

More on takeoff minima and departure procedures will appear in future *Instrument Readings*. This is the first of a series of four articles on the subject.

Oh, you did file a NASA ASRS form for that flight, didn't you?

*The author invites discussion and constructive comments. stan@sprevost.net*