Overview
Reduced Vertical Separation Minima covers the North Atlantic, Europe, Middle East, and Pacific. The goal of RVSM is to reduce the vertical separation above flight level (FL) 290 from the current 2000-ft minimum to 1000-ft minimum.

Basic Terms
ACFP-Advanced Computer Flight Planning System—Computer flight planning system used by TACC for air mobility missions. Most flight plans are built by flight planners in the flight planning shop and should reflect your mission (times, appropriate tracks, DIP CLNC, etc.). The flight plan is requested either through Command Post at an AMC base or direct to them (DSN 779-3325/3415/3490/3426). Flight plans are optimized (current winds, altitude, NAT, etc.), so expect min fuel after flying high flight levels—plan accordingly.

Also, even though these are built by big heads, you need to sanity check them.

Air Traffic Flow Mgmt/Central Flight Mgmt Unit—the office in Eurocontrol that calculates airspace capacity and issues slot times. If you get a slot time, the tolerance for takeoff is -5/+10 minutes—if you can’t make it, re-coordinate early with clearance delivery. This office also requires early filing of flight plans (>4 hours prior to takeoff).Slot times are N/A for STS/State and OAT.

European RVSM—requires RNP-5 (BRNAV). See AP2 ch 1 & 5.

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Preflight Planning
Cruising levels—Between FL290 and FL410 the separation is 1000’ instead of 2000’. The direction will be based on the magnetic heading—odd FL=000°-179°, even FL=180°-359° (in Italy, France, Portugal, and Spain—odd FL=270°-089°, even FL=279°-269°).

North Atlantic Track Message—produced daily (and changes daily) to account for favorable winds and traffic requirements over the North Atlantic. Get from Base Ops (at an east coast or European base if necessary) or notam website.

Flight plans—ACFP flight plans are the best choice to use in NAT area since they reflect the current NAT message. Everywhere else can use CFPS built by request of RVSM flight plans the day prior, or ACFP may not plan to use those altitudes.

Height measuring units—Flights may be requested to fly over these points to verify the accuracy of aircraft equipment. They’re located at Strumble (UK), Nattenheim (GE), Geneva (Switzerland), and Linz (Austria). In reality the only points we may be asked to use are in the UK and Germany, since our DIP CLNC rarely lets us into Swiss or Austrian airspace.

Entry/exit points—transition points into European RVSM airspace that must be filed in block 15, followed by the requested flight level 1801’ completion—RVSM capable aircraft enter a “W” in block 10 to show “W” is intended (even if you intend to fly above or below RVSM airspace), and enter “R” for RNP-5/BRNAV capable. In Europe enter a “Y” if equipped for 8.33 VHF freq separation (enter “STS/EXMB83” in block 18 if not 8.33 capable). On NAT, Shanwick requires “X” for MNPS. Time is takeoff minus 20 minutes (std taxi/block time—see AP2 for Europe). Enter in block 15 the entry and exit point for RVSM airspace (see Mach technique below), as well as requested flight level. If you are operating as NAT and non-RVSM, enter “STS/NONRVSM” in block 18 (and “W” in block 10)—but you won’t get it in NAT airspace. Best to file a flight plan for a altitude lower (below FL280). Don’t enter the “W” in block 10, and enter STS/NONRVSM in block 18. ALTRV-no “W” in block 10.

RNP-Required Navigation Performance—Navigation precision required for a specific route, varies depending on location. Navigation is accurate to this level 99% of the time.

RVSM—Reduced Vertical Separation Minima—Application of 1000’ vertical separation between FL290 and FL410—requires properly equipped (and certified) aircraft and flight crew. Don’t overshoot or undershoot assigned altitude by >150’, and report arriving at any assigned altitude. Climb or descend in RVSM airspace at 500-1000 fpm. Check NOTAM website.

PacOTS—Pacific Organized Track System between Hawaii/West coast and Japan. Separation at least 50 nm. RNP-10. See AP3 and NOTAM website.

Polar Track System (PTS)—Established routes between Europe and Alaska, MNPS/RVSM. Clearance required from Reykjavik prior to entry. Issues with HF reliability, see AP2.
Inflight

Clearances—when entering RVSM everywhere but the NATs, the clearance is received as normal. For NATs, it gets more complicated—your clearance issued on the ground will usually only get you as far as the oceanic entry point, you must get oceanic cnc prior to coast out (30 min prior preferred). Westbound you’ll need oceanic clearance prior to 2° west from Shanwick ACC on legs 123.9/130.5 or 135.05 (see European IFR supp & FIFh for map). Santa Maria get cnc prior to their airspace (or on ground at Lajes) on 127.9 or 17946. Eastbound get it from Gander on 134.9 (northern routes) or 135.05 (southern routes) or New York center on ATC primary or 129.9. Iceland Radio (Reykjavik) gives clearance on their VHF or HF prior to their airspace. If you need to verify the NAT message (which you MUST have with you) over Europe dial up freq 133.8—it has a recording of the NAT message.

Check FLIP for current freqs. Call for clearance with the following format:

You: Shanwick, Stout 91 estimates 52N15W at 0230

Them: Stout 91, go ahead

You: Shanwick, Stout 91 estimates 52N15W at 0230

Unlikely

Emergencies

Loss of equipment

Emergency Descents—FLY FIRST—if you are in radar contact—talk to the controlling agency. If you are not in radar contact, talk to the controlling agency, initiate a 90° turn to offset ½ the track separation (NATs 30 nm, NOPAC 25 nm, away from the track system) before descending. If you can maintain altitude offset 500’, otherwise descend below FL280. Let other aircraft around you know where you are, and what you’re doing using 121.5 and 123.45. Turn on all exterior lights (IAW ops limits). If your—squawk EMER—remember that aircraft are probably close both horizontally and vertically, and they are not just a collision threat but a possible resource in an emergency!!

Resources: (gov/.mil sites may require .mil connection)

Current implementation map—and lots of info
www.faa.gov/ats/ats/status_ww.htm
www.eurocontrol.be/
North Atlantic Tracks: AP2 ch 5 (NIMA website)
https://164.214.2.62/products/digitalaero/index.cfm
www.faa.gov/NTAP
www.notams.cjs.mil
General Oceanic Procedures
Alaska Supplement, Canadian Supplement
https://www.airnc.com/index.html
KC-135 Navigation Procedures
AFI 11-2KC-135V3, Ch 4 and 6.
General RVSM and RNP planning info
FLIP—General Planning ch 5
Advanced Computer Flight Plan
https://acfp.scott.af.mil/
FAA RVSM + Strategic lateral offset (look in documentation-WATRS)
http://www.faa.gov/ATS/ATO/RVSM1.HTM
http://www.faa.gov/ATS/ATO/130.htm
FAA NOTAM book for international oceanic procedures
www.faa.gov/NTAP
AMC Integrated Flight Management
https://amc.af.mil/m21/index.html
FAA International Flight Information Manual
http://www.faa.gov/ats/aat/IFIM/index.htm
TCAS restrictions for Pacer Crag (buried in lots of other good stuff)
Phrasology
AP2 chapters 1 and 5
National Route Program/ North American Routes (NARs)
AP2 ch 5 and Canadian Supplement
AMC Aircrew Portal
https://private.amc.af.mil/a3/aircrewportal/
Lots of other miscellaneous...
http://www.baseops.net

No warranties—check everything in this guide yourself!!!

Inputs—Major Scott Snyder DSN 638-4886 or planebuilder@netscape.net

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