ECU21 — FUEL TABLES TO LOAD

Barrett IO-540-D4A5 • from ECU20 flight test 2026-06-05 • ROP • GAMI unchanged

ECU20 flew very well. Small refinements only. Cells above 2700 RPM are governor-limited (unusable) and not shown. AMBER + bold = changed from ECU20 (▲ up, ▼ down); · = unchanged. All changes are in the RPM table; MAP is unchanged.

WHAT THE ECU20 TEST SHOWED

- Cruise 2200: 13.4 AFR — dead on 13.5. The retarget worked.
- Cruise 2300/2400: 12.9 / 12.0 — still rich of 13.5, lean via RPM cells.
- Taxi: below 1000 RPM ran 13.0 (rich); 1100-1300 ran 13.3 (on target). Corrected per-cell, not as one block.
- Climb 2500: 10.6 AFR, CHT6 393F STABILIZED (was 411 rising). Working.
- Takeoff 2600/2700: 9.9 AFR — on 10.0 goal. Hold.

CHANGES

- Taxi per-cell, 1000 anchored to 13.5: 500/750=133 (idle 850-900 ran 13.0), 1000=136 (→13.5), 1100-1300=138 (near goal). Idle=no-motion 850-900, taxi=moving 900-1000.
- Cruise 2300: 176 → 168, 2400: 191 → 170 (→13.5). 2200 held (perfect 13.4).
- Climb 2500: 212 → 220 — margin bump. Engine was cold-started + only 2500ft; extra fuel on CHT6 (hot cyl) is cheap insurance for long/hot climbs.
- Takeoff 2600/2700: unchanged (on goal). Cyl trims: unchanged (GAMI).
- Transition bridge 1400-2100 re-smoothed to new taxi/cruise anchors.

RPM FUEL TABLE (usable cells, ≤2700)

RPM	ECU20	ECU21	Δ	RPM	ECU20	ECU21	Δ
500	139	**133**	**▼-6**	1800	159	159	·
750	139	**133**	**▼-6**	1900	163	163	·
1000	139	**136**	**▼-3**	2000	167	167	·
1100	139	**138**	**▼-1**	2100	171	171	·
1200	139	**138**	**▼-1**	2200	175	175	·
1300	139	**138**	**▼-1**	2300	176	**168**	**▼-8**
1400	143	**142**	**▼-1**	2400	191	**170**	**▼-21**
1500	147	**146**	**▼-1**	2500	212	**220**	**▲+8**
1600	151	**150**	**▼-1**	2600	217	217	·
1700	155	**154**	**▼-1**	2700	228	228	·

MAP FUEL TABLE (all 64 cells — UNCHANGED from ECU20)

MAP air curve verified and unchanged. Shown for completeness.

MAP"	ECU20	ECU21	Δ	MAP"	ECU20	ECU21	Δ
3.72	100	100	·	17.70	66	66	·
4.16	100	100	·	18.10	68	68	·
4.59	17	17	·	18.50	70	70	·
5.03	18	18	·	19.00	73	73	·
5.46	20	20	·	19.40	75	75	·
5.90	21	21	·	19.80	75	75	·
6.33	23	23	·	20.30	77	77	·
6.77	24	24	·	20.70	82	82	·
7.20	26	26	·	21.10	84	84	·
7.64	27	27	·	21.60	87	87	·
8.08	29	29	·	22.00	89	89	·
8.51	30	30	·	22.40	91	91	·
8.95	32	32	·	22.90	94	94	·
9.38	33	33	·	23.30	96	96	·
9.82	35	35	·	23.70	98	98	·
10.30	36	36	·	24.20	101	101	·
10.70	37	37	·	24.60	103	103	·
11.10	38	38	·	25.10	105	105	·
11.60	40	40	·	25.50	108	108	·
12.00	42	42	·	25.90	110	110	·
12.40	43	43	·	26.40	112	112	·
12.90	45	45	·	26.80	115	115	·
13.30	45	45	·	27.20	117	117	·
13.70	45	45	·	27.70	119	119	·
14.20	47	47	·	28.10	122	122	·
14.60	49	49	·	28.50	124	124	·
15.00	51	51	·	29.00	126	126	·
15.50	54	54	·	29.40	129	129	·
15.90	56	56	·	29.80	131	131	·
16.30	58	58	·	30.30	133	133	·
16.80	61	61	·	30.70	136	136	·
17.20	63	63	·	31.10	138	138	·

EXPECTED AFTER LOADING

- Taxi: ~13.5 at 0% trim
- Cruise 2200-2400: ~13.5 across the band, best speed

- Climb 2500: ~10.2, CHT6 with margin on long/hot climbs
- Takeoff: ~10.0 max power

If cruise speed at 13.5 checks out vs old 12.0 runs, and CHT6 holds on a full climb to altitude, this may be the settled ROP baseline → then open LOP/GAMI.