Maintenance Release

Every time you go flying you look at a maintenance release. Do you always look in all the right places? Do you know exactly what you should be looking for? If not, here are some pointers that may be helpful.

Part 1

Part 1 is the section that's filled out when the MR is issued, and which many pilots are fairly good at not reading. Some key items on Part 1 are labelled on the example below, which is from PGL's recently expired MR.

1. This tells you when the MR expires. It's 12 months or 100 hours of engine time after the issue, whichever comes first. The time here – 13406.5 in this case – is Total Time in Service (TTIS), which for many aeroplanes is also the time on the tacho.
2. This tells you the date and the TTIS when the MR was issued. The figures in Item 1 are 1 year and 100 hours later.
3. This tells you the aeroplane has the right instruments and lighting to be flown VFR by night as well as day, but it's not suitable for IFR. It also tells you it's suitable for charter operations.
4. This lists the scheduled maintenance, that is, the maintenance that needs to be done regardless of whether anything breaks. The items on this list are:
    a. Record oil added, which is something else that pilots are fairly good at not doing.
    b. 50 hourly oil and filter change. The time written here is a tacho time. In PGL the TTIS is not the same as the tacho time, so it doesn't appear anywhere in the cockpit. NAS needs to write the tacho time so we can see when the oil change is due. They've noted the tacho time at issue – 2147.4, which is also shown in Part 3 – and added 50 hours to that. Being a pilot you are of course highly numerate, meaning you can add 50 to this time, and you know the MR expires at 2247.4 hours on the tacho.
    c. The last item is a fire extinguisher overhaul due on a set date. Scheduled maintenance like this, or Airworthiness Directives (ADs) issued by CASA, must be actioned by the due date (or aircraft time). If they're not, the aircraft is not fit to fly. If you see the tacho time or the date is getting close to one of these, let Dave Beech know (rather than assume someone else has) so he can arrange the appropriate work with NAS.

Part 2

Part 2 is for unscheduled maintenance. The endorsements for the fire extinguisher and the 50-hourly oil change don't really need to go here because they're scheduled maintenance, and as such they're already in Part 1. But just in case you don't read Part 1……..

The third endorsement (Item 5) was by one of the instructors, who decided the turn coordinator needed to be put on the Steven Seagal (ie. bad actor) list. I signed it with the date and my ARN, as per the rules, but I also wrote in the Clearing Endorsements column (Item 6). That wasn't absolutely necessary, but since you don't legally need a turn coordinator for Day VFR flight, I just chose to make it clear that "Turn Coord US" didn't make the aeroplane unserviceable. Had it been, say, the altimeter or ASI that was U/S, that would have been a different story.

The other, more important, clearing endorsement was by NAS who, like the sparkie or mechanic who's just charged you a $150 callout fee, found no fault!

When you see an endorsement in the left side of Section 2, you want it to be either fixed and signed off in the right side, or to be something that doesn't stop the aeroplane from flying.

Part 3

This is the best place to see the tacho time at issue. When you do your daily inspection and sign, you'll notice if the tacho time is getting close to 2247.4, in which case you can let Mr Beech know so he can book the aeroplane in for its 100-hourly.

Most of us don't fill in TTIS at the end of our flight because we don't know if ours will be the last flight of the day, so when we sign we usually fill in the previous line with the TTIS from the last flying day.

It's also good to note total landings for the previous day, which we can count up from the other sheet – the one with VDO time that Dave Mc uses to do our accounts. That's a pretty logical thing to do, since wear and tear on wheels and tyres and struts doesn't depend on hours flown, but rather on the number of times we've banged the aeroplane onto the ground. Incidentally, for the benefit of the NAS staff reading this, I always tell students to count a "bounce-bounce-bounce-settle on the runway" landing as 1, not 4!

Note that last column says cycle totals, with another example being pressurisation. As with landings, hull fatigue in a pressurised aircraft doesn't depend on hours flown as much as the number of cycles. That lesson was learnt, or at least reinforced, about 30 years ago when a 737 in Hawaii suffered an explosive decompression. A typical 737 in Australia might fly 1000 hours of Perth-Melbourne or Sydney-Adelaide and do 300 pressurisations, but flying half-hour legs between the Hawaiian islands, 1000 hours means more like 2000 pressurisations, which is much more relevant than hours flown. So the appropriate inspection and maintenance on the hull will be done, say, every 200 pressurisations rather than every 1000 hours.

Lastly, apart from the obvious safety aspect of an MR, if you bend the aeroplane, and if you haven't read the MR properly and you've flown when some scheduled maintenance was overdue, or when something written in Part 2 made it unfit to fly, that will be all the excuse the insurance company needs to wash their hands of it. That could make the whole exercise even more expensive than flying at Jandakot!

Australian Government
Civil Aviation Safety Authority

Maintenance Release A 232743

Civil Aviation Regulation 43

Part 1

EXPIRES 30/5/2020 OR 13406.5

Aircraft Type C172P VH- PGL

This Maintenance Release has been issued by virtue of Regulation 43(7) (a) of the Civil Aviation Regulations and except where it ceases to be in force by virtue of Regulation 45 or Regulation 47 of the Civil Aviation Regulations shall remain in force until the expiry date or aircraft time in service shown **whichever is the earlier.**

Issued by	Aircraft total time in service at issue	Time	Date	Place
Northam Air Services	13306.5	1630	30/5/19	Northam

Signed	AME licence/authority no.		Operational Category
	435869	☐ IFR ☒ VFR Night ☒ VFR Day	Charter.

Maintenance requirements - The following maintenance, in addition to daily inspections, is required to be carried out on the aircraft during the period for which this Maintenance Release is expressed to remain in force, in order to comply with requirements or conditions imposed under the Civil Aviation Regulations.

Schedules/System of Maintenance applicable to this aircraft: CASA Schedules + ENS 4th/1

Item no.	Maintenance required	Due at date/ Aircraft TTIS	Complied with, entered & certified in Log Book or Part 2 of MR	Date
1	Record oil uplifts on this MR	Daily		
2	50 hrly oil & filter	2197.4 Tacho 1 Shrs		12/4/19
3	Amerex Fire extinguisher o/h	1/8/19		05/09/19
	CANCELLED 25/02/2020			

Item no.	Maintenance required	Due at date/ Aircraft TTIS	Complied with, entered & certified in Log Book or Part 2 of MR	Date

Part 2

Item no.	Endorsements	Date, signature and licence no.
1	Fire extinguisher due over haul	05/9/19 544408
2	50 Hr. Due	
3	Turn Odds US	14/12/19 404867

Item no.	Clearing endorsements	Clearing signature, licence/authority no. and date
1	New fire extinguisher fitted serial no F-5595835D	544408 05/9/19
2	50 Hr c/o SN 8636	
3	OK FOR DAY VFR Tested No fault found.	404867 14/12/19 5/1/20

A signature in Part 2 of this Maintenance Release certifying for the completion of maintenance shall constitute a certification required by Civil Aviation Regulation 42ZE.

DAILY INSPECTION CERTIFICATIONS AND AIRCRAFT TIME-IN-SERVICE

Part 3

Date	Daily Inspection Certification (Pilot, LAME, MA)		Aircraft Time in Service				Cycle Totals, e.g. Landing/Start Pressurisation		
			Flight Time		Progressive Total				
	Signature	Licence no.	Hrs	Min	Hrs	Min	L		0/1
		Brought Forward:			2147	4			
1/6/19		557404	0	6	2148	1	1		
2/6/19		404867	1	2	2149	3	13		
9/6	A Smith	783264	0	7	2150	0	5		0/1
15/6		404867	0	9	2150	9	7		
1/7	SULLIVAN	419600	0	7	2151	0			
2/7		404867	2	6	2155	6	10		
6/7		404867	1	2	2156	8	4		
13/7		419600	0	3	2157	1	7		
14/7/19		03317	2	3	2159	3	6		
15/7/19	TIM SULLIVAN	419600	1	7	2161	0	-		
16/7/19		557404	1	1	2162	1	2		
27/7/19		404867	2	8	2164	9			
3/8/19		404867	1	6	2166	5	2		
11/8	A Smith	783264			2168	1			
12/8		191414	0	5	2168	6	6		
17/8		404867							
18/8		419600	1	9	2170	5	8		
19/8		153387	0	5	2171	0	5		
21/8	A Smith	783264	2	8	2173	8	1		
25/8		1006122	0	8	2174	4	2		
28/8		1009702	1	0	2175	00	2		
31/8		403577	1	0	2175	4	2		

Date	Daily Inspection Certification (Pilot, LAME, MA)		Aircraft Time in Service				Cycle Totals, e.g. Landing/Start Pressurisation		
			Flight Time		Progressive Total				
	Signature	Licence no.	Hrs	Min	Hrs	Min	L		0/1
		Brought Forward:							
6/9		557404	1	1	2177	5			
8/9/19		03317		8	2178	3			
15/9		B38914							
15/9		1036291	1	49	2228	52	80	1	9
21/9		404867			2181	8			
27/9	RILEY	191357			2184	5	1		
28/9	RILEY	191357			2185	2	1		
29/9	RILEY	191357			2186	1	1		
30/9	RILEY	191357			2186	5	1		
1/10	RILEY	191357	6	7	2193	5	6		
5/10		404867	1	3	2189	8	-		
6/10		1006122			2190	3	5		
13/10/19		03317			2190	8			
19/10/19		404867	2	9	2193	7	6		
26/10/19		1006122		4	2194	1			
28/10/19		178295	1	0	2195	1			
8/11/19		557404	0	8	2195	9			
10/11/19		03317	0	5	2196	4	2		
17/11/19		1006122			2196	5			
21/11		1009702	0	3	2197	1			
7/12/12		404867	1	1	2198	2	2		
15.12.		B38914	0	7	2198	7			

A signature in Part 3 of this Maintenance Release certifying for the completion of maintenance shall constitute a certification required by Civil Aviation Regulation 42ZE