

LAPORAN *ON THE JOB TRAINING*
DI AKADEMI PENERBANGAN INDONESIA BANYUWANGI
01 APRIL 2024 – 28 JUNI 2024



Disusun Oleh :
MUHAMMAD AKBAR ANSOR
NIT. 30421039

PROGRAM STUDI DIPLOMA 3 TEKNIK PESAWAT UDARA
POLITEKNIK PENERBANGAN SURABAYA
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LAPORAN *ON THE JOB TRAINING* (OJT) DI AKADEMI PENERBANG INDONESIA BANYUWANGI

Oleh :

Muhammad Akbar Ansor

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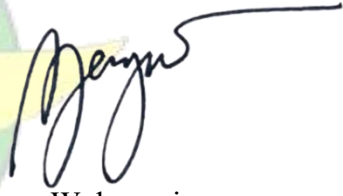
Laporan *On The Job Training* (OJT) ini telah diterima dan disetujui sebagai salah satu syarat penilaian *On The Job Training* (OJT).

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KATA PENGANTAR

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Penyusunan laporan *On The Job Training (OJT)* ini memiliki maksud dan tujuan sebagai salah satu cara kami untuk lebih mendalami dan mempraktekkan ilmu yang telah kami dapatkan dalam pelaksanaan *On The Job Training (OJT)*. Selain itu juga bermanfaat untuk menambah wawasan dan pengetahuan bagi para pembaca, khususnya bagi kami sendiri.

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Banyuwangi, 28 Juni 2024



Muhammad Akbar Ansor

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OJT (*On The Job Training*)

Kegiatan pembelajaran praktek maupun teori secara langsung pada lingkungan kerja dengan supervise yang kompeten dibidangnya.

API (Akademi Penerbang Indonesia)

Perguruan tinggi dibawah naungan Kementrian perhubungan yang terletak di Banyuwangi.

LP3B (Loka Pendidikan dan Pelatihan Penerbang Banyuwangi)

Sebuah fasilitas pendidikan pilot kedua yang dimiliki pemerintah setelah sekolah serupa di Curug, Tangerang, Banten yang berdiri pada 1952.

BLU (Badan Layanan Umum)

Pengelolaan keuangan yang memberikan keleluasaan untuk menerapkan praktek bisnis yang sehat untuk meningkatkan pelayanan kepada masyarakat untuk memajukan kesejahteraan dan mencerdaskan kehidupan bangsa.

ICAO (*Internatonal Civil Aviation Organization*)

Sebuah lembaga Perserikatan Bangsa-Bangsa yang didirikan menurut Konvensi Chicago 1944 tentang Penerbangan Sipil Internasional

AFML (*Aircraft Fligh Maintenance Logbook*)

Buku wajib terbang yang ada di pesawat yang sedang beroperasi. Buku ini berisi data catatan terbang pesawat yang ditulis oleh engineer dan pilot.

CASR (*Civil Aviation Safety Regulation*)

Berisi tentang aturan pengoprasian pesawat

DGCA (*Directorate General of Civil Aviation*)

Unsur pelaksana sebagian tugas dan fungsi Kementerian Perhubungan Indonesia, yang berada di bawah dan bertanggung jawab kepada Menteri Perhubungan.

AMO (*Approved maintenance organizations*)

Organisasi yang disahkan oleh DGCA untuk melakukan perawatan, bn perbaikan dan modifikasi pesawat sesuai dengan cakupan kemampuannya

AMM (*Aircraft Maintenance Manual*)

Prosedur yang dilakukan dalam perawatan pesawat.

PEL (*Personal Experient Logbook*)

Sebagai salah satu bukti bahwa yang bersangkutan telah berpengalaman melaksanakan suatu pekerjaan.

BAB 1

PENDAHULUAN

1.1. Latar Belakang

Politeknik Penerbangan Surabaya merupakan salah satu Unit Pelaksana Teknis (UPT) yang berada dibawah naungan Badan Pengembangan Sumber Daya Manusia (BPSDM) Perhubungan dimana tugas pokok dan tanggung jawabnya adalah sebagai penyelenggara pendidikan dan pelatihan penerbangan guna menghasilkan Sumber Daya Manusia Perhubungan yang berkompetensi dalam dunia transportasi udara yaitu tenaga kerja yang terampil yang siap pakai karena telah mendapatkan program pendidikan khusus/kejuruan untuk mendapatkan kecakapan khusus yang bersifat operasional/praktikal dengan sertifikasi kecakapan tertentu.

Politeknik Penerbangan Surabaya memiliki berbagai program studi, salah satunya adalah Program Studi Teknik Pesawat Udara (TPU). Diperlukan praktik yang dapat diperoleh melalui kegiatan *On the Job Training* (OJT) atau praktek kerja lapangan yang merupakan salah satu program kurikulum pendidikan di Politeknik Penerbangan Surabaya, dengan harapan agar para taruna mampu mengaplikasikan kemampuannya di dunia kerja nanti, sehingga teori yang diperoleh selama menempuh pendidikan dikampus dengan praktek sebenarnya yang ada dilapangan dapat terwujud.

Pelaksanaan *On the Job Training* (OJT) merupakan kewajiban bagi taruna/i OJT Program Studi Teknik Pesawat Udara, sebagaimana tercantum dalam Peraturan Kepala Badan Pengembangan SDM Perhubungan Nomor PK.09/BPSDMP-2016 tentang Kurikulum Program Pendidikan Dan Pelatihan Pembentukan di Bidang Penerbangan. OJT merupakan suatu kegiatan Tridarma Perguruan Tinggi (Pendidikan, Penelitian dan Pengabdian) untuk lebih mengenal dan menambah wawasan dan ruang lingkup pekerjaan sesuai bidangnya.

Teknisi Pesawat Udara mempunyai fungsi yang sangat penting dalam melaksanakan perawatan pesawat udara baik di *base maintenance* ataupun di *line maintenance*. Contohnya seperti pelaksanaan OJT Taruna Teknisi Pesawat Udara dari Politeknik Penerbangan Surabaya yang dilaksanakan di Akademi Penerbang Indonesia (API) Banyuwangi yang terletak di Banyuwangi, Jawa Timur dengan

lingkup kerja Hangar A dan Hangar C. Para peserta OJT melakukan perawatan pesawat Cessna-172S dibagian *Line Maintenance*.

Setelah pelaksanaan *On the Job Training* (OJT), taruna dituntut untuk membuat laporan *On the Job Training* (OJT) sebagai bentuk hasil bahwa taruna telah melaksanakan praktek lapangan OJT. Laporan OJT ditulis berdasarkan pengalaman taruna selama bekerja di instansi terkait, penulisan dilakukan secara sistematis, bersifat objektif, dan menggunakan Bahasa Indonesia yang benar berdasarkan kaidah KBBI. Laporan OJT ditulis dengan sedemikian rupa dengan tujuan menjadi referensi dan sumber bagi peserta OJT selanjutnya.

1.2 Tujuan dan Manfaat

1.2.1. Tujuan

Tujuan dilaksanakannya *On the Job Training* (OJT) berdasarkan pedoman OJT terbagi menjadi dua yaitu tujuan umum dan tujuan khusus, sebagai berikut:

1. Sebagai persyaratan menyelesaikan studi Program Diploma 3 Teknik Pesawat Udara sesuai dengan kurikulum AMTO 147 dan kurikulum pendidikan di Politeknik Penerbangan Surabaya.
2. Mengembangkan kerja sama dan kemampuan sosialisasi yang baik sesama taruna dan tenaga kerja pada unit kerja Politeknik Penerbangan Surabaya maupun pada Akademi Penerbang Indonesia.
3. (API) Banyuwangi. Setelah melaksanakan OJT taruna diharapkan memperoleh pengalaman dari instansi terkait sebagai pengembangan ilmu pengetahuan taruna di bidang teknik pesawat udara.
4. Peserta OJT dapat menerapkan seluruh pengetahuan tentang teknik pesawat udara yang diperoleh selama mengikuti pendidikan di Politeknik Penerbangan Surabaya, sehingga membentuk karakter yang terampil dan kompeten.
5. Sebagai langkah awal pengenalan lingkungan kerja penerbangan khususnya dalam bidang Teknik pesawat udara.
6. Memperluas wawasan sebagai calon tenaga kerja perusahaan / industri.

1.2.2. Manfaat

Manfaat dilaksanakannya *On The Job Training* sebagai berikut:

1. Bagi taruna, memperoleh pengalaman kerja di lokasi OJT, menerapkan kompetensi dan keterampilan yang telah dipelajari selama pendidikan, serta memperluas wawasan sebagai calon tenaga kerja perusahaan atau industri.
2. Bagi kampus, sebagai wadah aktualisasi kerjasama dengan berbagai perusahaan atau instansi dan menambah ruang diskusi dengan instansi terkait tentang permasalahan baru yang belum tercakup di tataran teoritis sehingga dapat menyesuaikan program pendidikan sesuai dengan kebutuhan lapangan kerja.
3. Bagi instansi lokasi OJT, mendatangkan suasana diskusi yang baru dengan taruna pada saat praktik dan bantuan untuk menyelesaikan tugas dan masalah.



BAB 2

PROFIL LOKASI *ON THE JOB TRAINING*

2.1 Sejarah Singkat Akademi Penerbang Indonesia Banyuwangi

Akademi Penerbang Indonesia (API) Banyuwangi berawal dengan nama Loka Pendidikan dan Pelatihan Penerbang Banyuwangi yang kemudian disingkat LP3 Banyuwangi. Kebijakan yang mengatur keberadaan Loka Pendidikan Pelatihan Penerbang Banyuwangi melalui peraturan Menteri Perhubungan Republik Indonesia No. PM No. 73 Tahun 2013 tentang Organisasi dan Tata Kerja Balai Pendidikan dan Pelatihan calon penerbang, calon instruktur penerbang, penerbang dan instruktur penerbang sesuai dengan peraturan perundang-undangan dan standar internasional.

Sekolah pilot negeri akhirnya berdiri di Banyuwangi pada tanggal 23 Desember 2013 secara resmi sekolah yang di beri nama Loka Pendidikan dan Pelatihan Penerbang Banyuwangi (LP3B) dibuka. Sekolah pilot negeri Banyuwangi ini merupakan yang kedua milik pemerintah setelah sekolah serupa di Curug, Tangerang, Banten yang berdiri pada 1952.

Balai Pendidikan dan Pelatihan Penerbang Banyuwangi, diresmikan berubah nama semula Loka menjadi Balai pada tanggal 20 Agustus 2015 dan pelaksanaan kegiatannya di atur dalam peraturan menteri perhubungan RI Nomor PM 123 Tahun 2015 tentang organisasi dan tata kerja Balai Pendidikan dan Pelatihan Penerbang Banyuwangi.

Selanjutnya pada tanggal 30 September 2016 berdasarkan keputusan menteri keuangan No. 740/KMK.05/2016 tentang penetapan Balai Pendidikan dan Pelatihan Penerbang Banyuwangi sebagai instansi pemerintah yang menerapkan Pola Keuangan Badan Layangan Umum (PK BLU), maka seluruh unsur tata kelolanya dilaksanakan dengan dtandar PK BLU seuai peraturan yang berlaku.

Pada 15 April 2019 Balai Pendidikan dan Pelatihan Penerbang Banyuwangi berubah nama menjadi Akademi Penerbang Indonesia Banyuwangi, berdasarkan Peraturan Menteri Perhubungan Republik Indonesia Nomor PM. 26 Tahun 2019 Akademi Penerbangan Indonesia Banyuwangi selanjutnya disebut API Banyuwangi merupakan perguruan tinggi negeri di lingkungan Kementrian

Perhubungan yang berada dibawah dan bertanggung jawab kepada kepala Badan Pengembangan Sumber Daya Manusia Perhubungan.

2.2 Data Umum

2.2.1 Visi dan Misi

VISI

Lembaga pendidikan dan pelatihan penerbang yang unggul dan profesional serta berdaya saing tinggi di wilayah Asia Pasifik.

MISI

Dalam upaya mencapai visinya, Akademi Penerbang Indonesia Banyuwangi memiliki Misi sebagai berikut:

1. Menyelenggarakan pendidikan dan pelatihan penerbang dan personil operasi penerbangan yang profesional sesuai standar internasional.
2. Menyelenggarakan pendidikan dan pelatihan untuk menghasilkan SDM dibidang penerbangan yang prima dan bermanfaat untuk kesejahteraan masyarakat.
3. Menyelenggarakan penelitian untuk perkembangan ilmu pengetahuan dan teknologi dibidang penerbangan serta pengabdian kepada masyarakat.
4. Mengembangkan kerjasama dengna lembaga dalam negeri maupun luar negeri.
5. Meningkatkan tata kelola lembaga mandiri, transparan, akuntabel efisien.
6. Mengembangkan kurikulum dan silabus program studi penerbang.
7. Menghasilkan lulusan penerbang yang mempunyai daya saing dan siap kerja pada industri penerbangan nasional dan internasional.

2.2.2 Arti Lambang dan Logo API Banyuwangi



Gambar 2. 1 Lambang API Banyuwangi

1. Burung elang menghadap kedepan dengan sayap terbentang melakukan pendaratan dengan warna dasar kuning dan pita berwarna orange bertuliskan Banyuwangi dengan ornament vector Gajah Oling sebagai kearifan lokal Banyuwangi serta bahasa sansekerta 'Madyasta Satyawada Sahwahita'. Bermakna: bahwa API Banyuwangi dalam tugasnya melaksanakan pendidikan dan pelatihan untuk mencetak insan perhubungan yang tangguh menyongsong perubahan global (nasional maupun internasional) dengan ceria, bahagia, energik dan optimis. Gajah Oling sebagai ikon khas Banyuwangi dengan filosofi 'GAJAH' merupakan binatang paling besar dan 'OLING' dalam bahasa osing berarti 'MENGINGAT/ELING'. Sehingga maknanya adalah harus mengingat apa yang Maha Besar. Bahasa sansekerta 'MADYASTA SATYAWADA SAHWAHITA' bermakna API Banyuwangi mencetak insan perhubungan yang berdiri teguh dan bermanfaat bagi Nusa dan Bangsa.
2. Garis horizontal dengan indicator arah (heading) dengan warna dasar coklat tua dan vektor landasan pacu (runway). Bermakna: API Banyuwangi mencetak insan perhubungan yang tangguh dengan menjunjung aspek keselamatan, keamanan dan pelayanan serta kesesuaian hukum.
3. Pesawat melakukan pendekatan di landasan pacu beserta indikator posisi pesawat dengan warna biru angkasa. Bermakna: bahwa penerbang API

Banyuwangi siap berkiprah dalam memajukan dinamika Dirgantara Indonesia secara mendunia.

4. Perisai pada burung elang dengan balutan warna merah putih dan logo peta dunia yang diambil dari lambang ICAO (International Civil Aviation Organization). Bermakna: bahwa API Banyuwangi berdiri pada wilayah Negara Kesatuan Republik Indonesia yang merupakan anggota dari International Civil Aviation Organization dengan semangat merah putih, API Banyuwangi diharapkan dapat memenuhi standar nasional dan internasional.



Gambar 2. 2 Logo API Banyuwangi

Logo Akademi Penerbang Indonesia Banyuwangi memiliki makna sebagai berikut:

1. Huruf A yang berbentuk pesawat kertas yang melambang keberhasilan API Banyuwangi saat ini yang berawal dari sebuah mimpi untuk mewujudkan sekolah pilot yang visioner.
2. Huruf P yang berbentuk taxiway menggambarkan proses perjalanan API Banyuwangi dalam mewujudkan impian.
3. Huruf I melambangkan sivitas akademika API Banyuwangi untuk memacu diri terus berinovasi.
4. Pesawat seaplane pada huruf I melambangkan API Banyuwangi pelopor sekolah pilot seaplane pertama di Indonesia.
5. Didominasi oleh warna orange dan biru yang memiliki makna semangat dan optimis yang tinggi serta dapat diandalkan dan bertanggung jawab

2.2.3 Fasilitas

Akademi Penerbang Indonesia Banyuwangi memiliki fasilitas sebagai penunjang Pendidikan yaitu Gedung Operasional 1 dan 2, Gedung semilator, asrama, kelas, Red Bird Simulator FMX1000 dan hanggar.

1. Fasilitas Hanggar Pesawat Udara

Akademi Penerbang Indonesia Banyuwangi memiliki fasilitas 3 unit hanggar pesawat udara yaitu Hangar A, Hangar B, Hangar C. Ketiga unit tersebut dapat menyimpan pesawat dengan total kapasitas pesawat 37 pesawat. Untuk gambar 2.3 dan gambar 2.4 merupakan Hanggar A dan B yang digunakan untuk melakukan perawatan line maintenance pesawat udara yang digunakan oleh penerbang. Pada gambar 2.5 dapat dilihat tampilan Hanggar C yang merupakan tempat pelaksanaan perawatan dan perbaikan pesawat, baik berupa *maintenance*, penggantian komponen, *cleaning*, penggantian consumable part, inspeksi ringan hingga tahunan, dan lain-lain.



Gambar 2. 3 Hangar A



Gambar 2. 4 Hangar B



Gambar 2. 5 Hangar C

Hanggar C memiliki fasilitas-fasilitas ruangan untuk mempermudah para engineer dalam menjalani perawatan pesawat berupa:

- 1) Ruang *Tools*, untuk menyimpan *tools*, *special tools*, dan alat-alat pendukung lainnya dalam melaksanakan perawatan maupun perbaikan pesawat udara.



Gambar 2. 6 Ruang Tools

- 2) Ruangan *Storage & Spare Parts*, untuk menyimpan suku cadang dan bahan-bahan pendukung seperti *Tire, oil*, dan lain lain.



Gambar 2. 7 Ruang Storage dan Spare Part

- 3) Ruangan *Engineering*, untuk tempat penyimpanan rekaman data-data pesawat seperti *Aircraft Flight Maintenance Logbook (AFML)* serta untuk evaluasi dan merencanakan jadwal inspeksi yang akan dilaksanakan oleh para engineer dilapangan.



Gambar 2. 8 Ruang Engineering

2. Fasilitas Pesawat Udara

Pada gambar 2.9, gambar 2.10 dan gambar 2.11 Akademi Penerbang Indonesia Banyuwangi memiliki fasilitas Pendidikan yaitu 35 unit pesawat latih *single engine* Cessna 172 SP dan 2 unit *multi engine* Piper Seneca V serta 2 unit *single engine* pesawat seaplane.



Gambar 2. 9 Pesawat Cessna 172 Skyhawk

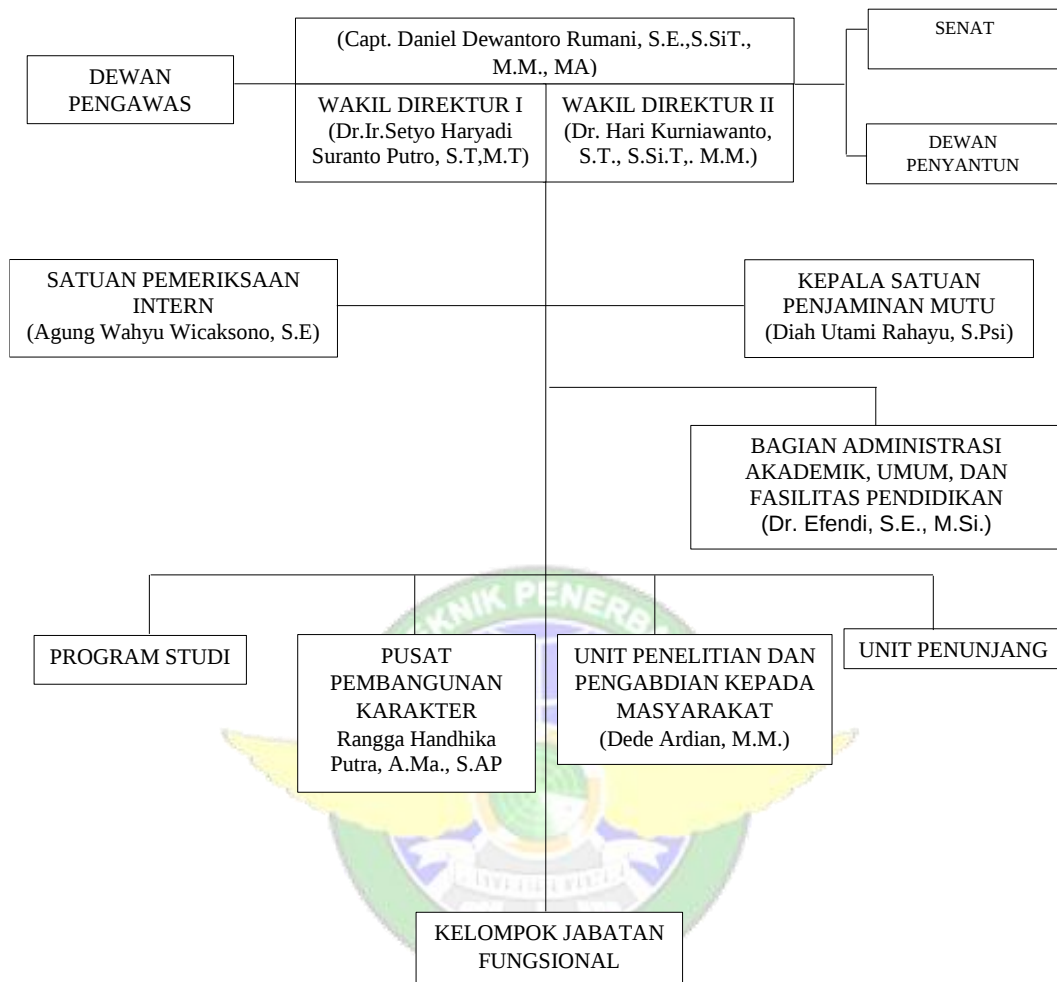


Gambar 2. 10 Pesawat Piper Seneca V



Gambar 2. 11 Pesawat Seaplane

2.3 Struktur Organisasi



Gambar 2. 12 Struktur Organisasi Akademi Penerbang Indonesia Banyuwangi

Berdasarkan gambar 2.12 semua unit bertanggung jawab terhadap direktur Akademi Penerbang Indonesia Banyuwangi yang sekarang dijabat oleh Dr. Capt. Daniel Dewantoro Rumani S.E., S.SiT., M.M., MA., selaku pimpinan tertinggi dari suatu institusi direktur bertugas mengambil kebijakan serta mengkoordinir segala bentuk kegiatan di lingkup API Banyuwangi. Tentunya tugas dan tanggung jawab yang besar tersebut dibantu dan didampingi oleh wakil direktur 1, wakil direktur 2 dan kabag dalam memimpin pelaksanaan kegiatan. Sedangkan sub bagian administrasi akademik ketarunaan dan sub bagian keuangan bertanggung jawab terhadap bagian administrasi akademik umum dan fasilitas diklat dalam mengatur dan mengelola keuangan, administrasi, pelayanan serta perencanaan bagi peserta didik.

Selain itu bagian fasilitas dan pendidikan serta satuan pemeriksa internal bertugas dalam pengadaan maupun penyelenggaraan sarana dan prasarana sebagai media pelatihan calon penerbang. Kemudian pelaksanaan kegiatan kerohanian, konsultasi serta keolahragaan merupakan tanggung jawab daripada unit bagian pembangunan karakter API Banyuwangi. Pada bagan diatas juga terdapat unit penelitian dan pengabdian masyarakat. Merupakan tenaga pengajar yang diberikan tugas tambahan dalam kegiatan dibidang penelitian serta pengabdian kepada masyarakat sebagai sekolah penerbang segala prosedur dan kurikulum API Banyuwangi harus berdasarkan dengan CASR 141 yang telah dikeluarkan oleh DGCA.

CASR 141 mengatur mengenai persyaratan dan standar pelatihan penerbangan termasuk fasilitas pesawat yang digunakan, prosedur, operasi keselamatan, sistem manajemen yang berkaitan dengan pelatihan penerbang baik swasta maupun komersial. Akademi penerbang Indonesia juga sudah memiliki sertifikat *Approved maintenance organizations* (AMO) terkait kinerjanya dalam melakukan perawatan, perbaikan, pemeliharaan preventif maupun perubahan pada pesawat udara. Hal ini sesuai dengan persyaratan dalam CASR part 145 dimana lembaga atau organisasi yang melakukan perawatan pesawat udara harus memiliki sertifikasi AMO yang dikeluarkan oleh direktorat jendral perhubungan udara.

BAB 3

TINJAUAN TEORI

3.1 *Cessna 172 Skyhawk*

Cessna 172 Skyhawk merupakan *single piston engine* yang digunakan sebagai penunjang proses pelatihan serta Pendidikan bagi calon penerbang di Akademi Penerbang Indonesia Banyuwangi dan mendapatkan reputasi sebagai pesawat latih terbaik. Pesawat *Cessna* seri 172 *Skyhawk* ini merupakan update dari model varian *cessna 172* sebelumnya yang dimana seri ini pertama kali diproduksi pada tahun 1998. Pesawat seri ini di motori dengan engine *Lycoming four- cylinder* yang disusun secara *horizontal opposed* dengan sistem *fuel injection* yang mampu menghasilkan tenaga sebesar 180 *horsepower*. Selain itu, pesawat di desain secara *high wing* yang menawarkan visibilitas dan stabilitas yang lebih baik.

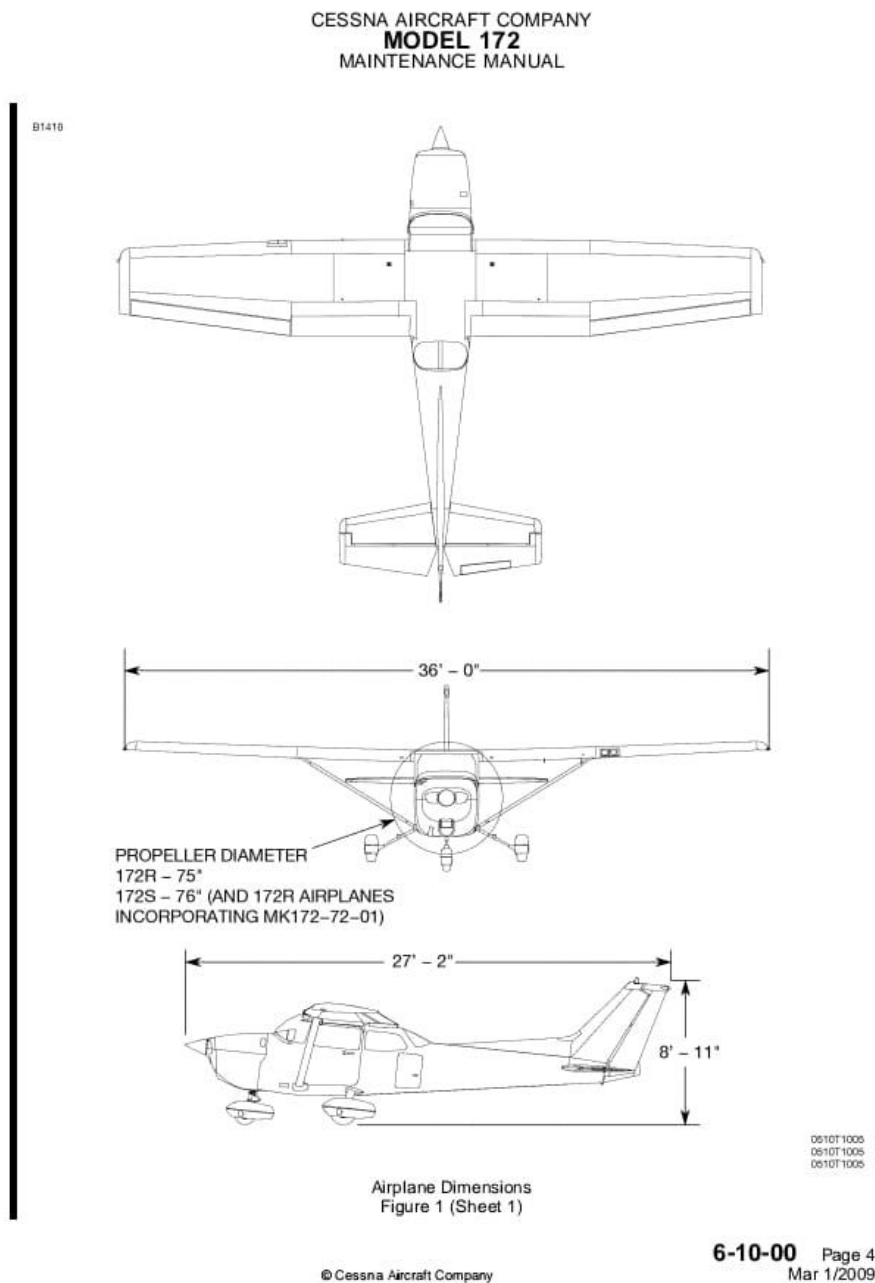
Pesawat Cessna 172 Skyhawk ini dibekali teknologi terbaru dalam sistem integrasi *avionic cockpit*, yaitu *Garmin G1000 Nav III*. Dengan antarmuka grafis yang meningkat, perangkat *hardware* yang powerfull, tampilan resolusi lebih tinggi, fungsionalitas tambahan untuk meningkatkan kesadaran situasional, dan teknologi nirkabel opsional, sehingga mempermudah pengguna dalam mengelola sistem *flight instrument*. Adapun beberapa fitur yang ditawarkan pada sistem *Garmin G1000 Nav III* pada pesawat ini sebagai berikut :

1. *Wireless database and flight plan loading.*
2. *Enhanced Vision System (EVS).*
3. *Enhanced HSI Functionality.*
4. *VFR Sectionals.*
5. *Chelton Flight Logic EFIS glass cockpits.*
6. *COM Frequency Decoding.*
7. *XGA technology display units.*

Berikut ini akan dijelaskan spesifikasi lebih lengkap dari Cessna 172 Skyhawk:

Tabel 3. 1 Spesifikasi Cessna 172S

<i>Dimensions</i>	
<i>Length</i>	27 ft 2 in (8,3 m)
<i>Height</i>	8 ft 11 in (2.7 m)
<i>Wingspan</i>	36 ft 0 in (11.00 m)
<i>Wing Area</i>	174 sq ft (16.17 sq m)
<i>Performance</i>	
<i>Maximum Cruise Speed</i>	124 ktas (230 km/h)
<i>Maximum Range</i>	640 nm (1,185 km)
<i>Takeoff Distance</i>	1,630 ft (497 m)
<i>Landing Distance</i>	1,335 ft (407 m)
<i>Maximum Climb Rate</i>	730 fpm (223 mpm)
<i>Maximum Limit Speed</i>	163 kias (302 km/h)
<i>Stall Speed</i>	48 kcas (89 km/h)
<i>Weights</i>	
<i>Maximum Ramp Weight</i>	2,558 lb (1,160 kg)
<i>Maximum Takeoff Weight</i>	2,550 lb (1,157 kg)
<i>Maximum Landing Weight</i>	2,550 lb (1,157 kg)
<i>Maximum Payload</i>	870 lb (395 kg)
<i>Useful Load</i>	878 lb (398 kg)
<i>Powerplant</i>	
<i>Manufacture</i>	Lycoming
<i>Model</i>	IO-360-L2A
<i>Power Output</i>	180 hp (180 hp)
<i>Propeller Manufacture</i>	McCauley
<i>Description</i>	2 blade metal, fixed pitch



Gambar 3. 1 Cessna 172S

Sumber: *Aircraft Maintenance Manual*

Pada Table 3.1 dijelaskan spesifikasi powerplant pesawat Cessna 172S Skyhawk berdasarkan referensi POH, pada pesawat tersebut dijelaskan bahwa pesawat Cessna 172S Skyhawk dengan model IO-360-L2A memiliki *fuel capacity* 56 gallons dengan *fuel tank* kiri 28 gallons dan *fuel tank* kanan 28 gallons serta *oil capacity* diperoleh 8 quarts.

3.2 Perawatan Maintenance Pada Pesawat Cessna 172

Perawatan pesawat udara merupakan salah satu unsur penting dalam suatu instansi di bidang penerbangan sebagaimana Akademi Penerbang Indonesia Banyuwangi. Sesuai dengan *Civil Aviation Safety Regulation (CASR) part 43 tentang Maintenance, Preventive Maintenance, Rebuilding and Alteration*. Perawatan adalah suatu rangkaian kegiatan yang dilakukan untuk memastikan bahwa pesawat udara beserta komponen-komponennya bekerja sesuai dengan fungsinya untuk memastikan keselamatan selama penerbangan. Dikarenakan setiap *part* atau komponen pesawat memiliki *lifetime* tertentu, sehingga harus dimonitor secara rutin, Perawatan pesawat udara meliputi inspeksi, *repair, servicing, overhaul* dan penggantian part.

Tujuan lain daripada perawatan pesawat udara adalah untuk mempertahankan pesawat dalam kondisi terbaik pada saat dioperasikan oleh pengguna. Untuk dapat melakukan perawatan dengan benar, maka setiap pesawat udara diharuskan memiliki Program Perawatan (*maintenance program*) yang berisi informasi detail tentang apa, kapan dan bagaimana perawatan sebuah pesawat udara.

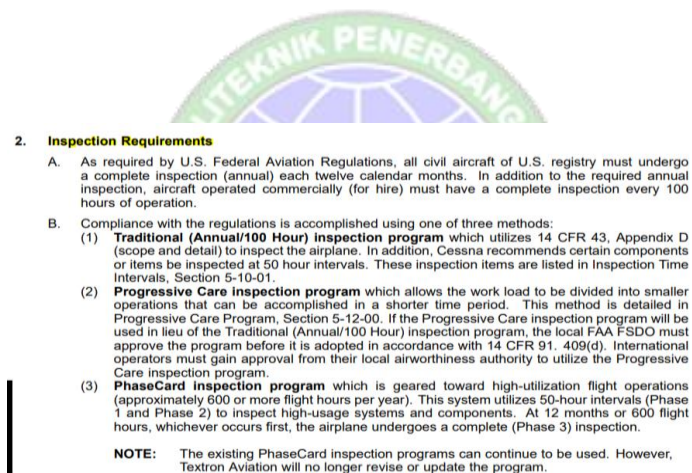


Gambar 3. 2 Maintenance Cessna 172S

Unit bengkel Akademi Penerbang Indonesia Banyuwangi menerapkan tradisional inspeksi, dimana inspeksi dilakukan setiap interval waktu tertentu menggunakan pedoman *flight hours* yang didasarkan pada jumlah jam operasional suatu pesawat terbang. Operasi yang tersisa mencakup semua persyaratan inspeksi yang jatuh tempo pada interval lain.

3.3 Persyaratan Inspeksi

Sebagaimana disyaratkan oleh U.S. *Federal Aviation Regulation* pada gambar 3.3, semua pesawat terbang sipil yang terdaftar di U.S. harus menjalani pemeriksaan tahunan setiap dua belas bulan kalender. Selain pemeriksaan tahunan yang diwajibkan, pesawat yang dioperasikan secara komersial (untuk disewakan) harus menjalani pemeriksaan lengkap setiap 50 dan 100 jam.



Gambar 3. 3 Maintenance Manual Cessna 172S

Sumber: *Aircraft Maintenance Manual*

Kepatuhan terhadap peraturan dilakukan dengan menggunakan salah satu dari tiga metode berikut:

- a. *Traditional (Annual/100 hour) Inspection Program* yang merekomendasikan item komponen tertentu diperiksa dengan interval 50 jam. Item inspeksi ini tercantum dalam *Inspection Time Intervals*.
- b. *Progressive Care Inspection Program* yang memungkinkan beban kerja dibagi menjadi lebih kecil operasi yang dapat diselesaikan dalam waktu yang lebih singkat. Metode ini dirinci dalam Program Perawatan Progresif, Jika program pemeriksaan Perawatan Progresif akan digunakan sebagai

pengganti program inspeksi Tradisional (Tahunan/100 Jam), Internasional operator harus mendapatkan persetujuan dari otoritas kelaikan udara setempat untuk menggunakan *Progressive Care Inspection Program*.

- c. *Phase Card Inspection Program* yang diarahkan untuk operasi penerbangan dengan pemanfaatan tinggi (sekitar 600 jam terbang atau lebih per tahun). Sistem ini menggunakan interval 50 jam (Fase 1 dan Fase 2) untuk memeriksa sistem dan komponen yang sering digunakan. Pada 12 bulan atau 600 jam terbang, mana yang terjadi lebih dulu.

Selama kegiatan OJT perawatan pesawat udara yang dilaksanakan menggunakan *Traditional Inspection Program* yaitu sebagai berikut :

1. *50 hours inspection*
2. *100 hours inspection*
3. *Pre-flight check*

3.3.1 50 Hours Inspection

Kegiatan yang dilaksanakan pada saat pesawat Cessna mencapai 50 jam, sehingga pesawat tersebut harus masuk ke hangar untuk dilakukannya perawatan pesawat dengan referensi Aircraft Maintenance Manual Cessna 172 S. Sebagai contoh dilakukan inspeksi 50 jam pada tanggal 10-april-2024 oleh pesawat Cessna 172S Skyhawk PK-APK ditunjukkan pada lampiran 1.

3.3.2 100 Hours Inspection

Kegiatan ini sama dengan kegiatan inspeksi 50 jam dan ada beberapa tambahan. Dalam giatnya perawatan pesawat ini didasari dengan referensi dari AMM (*Aircraft Maintenance Manual*) yaitu inspection 100 ada terbagi 2 yaitu *Engine* dan *Airframe*. Seperti contoh pekerjaan 100 hours inspection pada pesawat PK-BYL tanggal 7 mei 2024 pada tanggal ditunjukkan pada lampiran 2.

3.3.3 Pre-flight Check

Pre-flight merupakan kegiatan pemeriksaan pesawat, kegiatan ini guna untuk memastikan kondisi pesawat siap untuk terbang. Dalam pelaksanaannya kegiatan ini dilakukan oleh *engineer* serta di *double check* oleh taruna penerbang yang akan melaksanakan latihan terbang sesuai dengan referensi *Pilot Handbook*.

3.3.4 *Temporary Storage Return to Service*

Temporary Storage adalah pesawat dalam keadaan tidak beroperasi paling lama 90 hari. Setelah disimpan sementara, dan menggunakan prosedur untuk mengembalikan pesawat kedalam layanan *service* untuk memperbaiki pesawat menjadi kondisi normal dan siap digunakan. Kegiatan yang dilaksanakan pada saat *Temporary Storage Return to Service* yaitu :

Tabel 3.2 *Task TSRS*

No	TASK
1	<i>Remove airplane from blocks and check tires for proper inflation. Check for proper nose gear strut inflation.</i>
2	<i>Check Battery and install.</i>
3	<i>Check that oil sump has proper grade and quantity of engine oil.</i>
4	<i>Service induction air filter and remove warning placard from propeller.</i>
5	<i>Remove material used to cover openings</i>
6	<i>Remove spark plugs from engine</i>
7	<i>While spark plugs are removed, rotate propeller several revolutions to clear excess oil from cylinders.</i>
8	<i>Clean, gap and install spark plugs. Torque spark plugs to the proper value and connect spark plug leads.</i>
9	<i>Check fuel strainer. Remove and clean filter screen if necessary. Check fuel tanks and fuel lines for moisture and sediment. Drain enough fuel to eliminate any moisture and sediment.</i>
10	<i>Perform a thorough preflight inspection, then start and warm up engine</i>

3.4 *Engine Ground Run*

Engine ground run dilakukan setelah engineer melakukan *pre-flight check* guna untuk memastikan *engine* dalam keadaan baik dan pesawat layak untuk terbang, *engine ground run* juga mengecek kedua *magneto* pada 1800 rpm guna mengetahui *drop magneto* dan *different magneto*.

ENGINE GROUND RUN REPORT

CESSNA 317C SHAWK

Serial Number
17-M6-2024

Date Completed
17-M6-2024

Aircraft Registration
Pr-87L

CAUTION:

THE AVIONICS SWITCH (BUS1 & 2) MUST BE OFF DURING ENGINE START TO PREVENT DAMAGE TO AVIONICS

Message/Alert/Advisory:
Many Vets need support!

Form No.: AP/C1735/GR

Revision: Ndx. 04

Issued Date: July 2020

Signature
[Signature]

AMEL NO.: 1048

LOG SHEET NO.: C1735-V-11088

START

TIME

Engine RPM

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

Remarks

1 Minutes 1000 RPM 61.0 95 3.5 1095 1 150 3 44.5 9r

1 Minutes 1200 RPM 64.0 90 4.0 1140 1 140 3 44.5 8r

1 Minutes 1400 RPM 67.6 90 4.6 1165 2 130 3 44.0 8r

1 Minutes 1600 RPM 70.1 100 5.6 1240 2 265 1 44.0 8r

1 Minutes 1800 RPM 72.7 105 6.7 1265 1 290 1 44.0 9r

1 Minutes 2000 RPM 73.2 110 8.4 1280 2 315 1 43.5 9r

Idle Power 2400 RPM 73.2 115 15.1 1295 1 340 1 43.5 9r

Idle 800 RPM 50.3 145 2.6 105.5 1 385 1 43.5 8r

Full Power 1000 RPM 53.4 150 3.0 1130 1 345 1 43.5 9r

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

BUS E VOLTS - Verify 24 V min. Shown

BUS VOLTS - Verify 13.5 V min. Shown

BAT 5 AMPs - Verify Discharge Shown

TEST

START

TIME

Engine RPM

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

Remarks

1 Minutes 1000 RPM 61.0 95 3.5 1095 1 150 3 44.5 9r

1 Minutes 1200 RPM 64.0 90 4.0 1140 1 140 3 44.5 8r

1 Minutes 1400 RPM 67.6 90 4.6 1165 2 130 3 44.0 8r

1 Minutes 1600 RPM 70.1 100 5.6 1240 2 265 1 44.0 8r

1 Minutes 1800 RPM 72.7 105 6.7 1265 1 290 1 44.0 9r

1 Minutes 2000 RPM 73.2 110 8.4 1280 2 315 1 43.5 9r

Idle Power 2400 RPM 73.2 115 15.1 1295 1 340 1 43.5 9r

Idle 800 RPM 50.3 145 2.6 105.5 1 385 1 43.5 8r

Full Power 1000 RPM 53.4 150 3.0 1130 1 345 1 43.5 9r

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

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Vacuum

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Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

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BUS VOLTS - Verify 13.5 V min. Shown

BAT 5 AMPs - Verify Discharge Shown

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

BUS E VOLTS - Verify 24 V min. Shown

BUS VOLTS - Verify 13.5 V min. Shown

BAT 5 AMPs - Verify Discharge Shown

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

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Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

BUS E VOLTS - Verify 24 V min. Shown

BUS VOLTS - Verify 13.5 V min. Shown

BAT 5 AMPs - Verify Discharge Shown

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

BUS E VOLTS - Verify 24 V min. Shown

BUS VOLTS - Verify 13.5 V min. Shown

BAT 5 AMPs - Verify Discharge Shown

Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

BUS E VOLTS - Verify 24 V min. Shown

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Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

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Oil Pressure (Psi)

Oil Temperature (Fahrenheit)

Fuel Flow (GPH)

EGT (Fahrenheit)

CRT (Fahrenheit)

AMPs (M APTS)

Vacuum

NOTE:

BUS E VOLTS - Verify 24 V min. Shown

BUS VOLTS - Verify

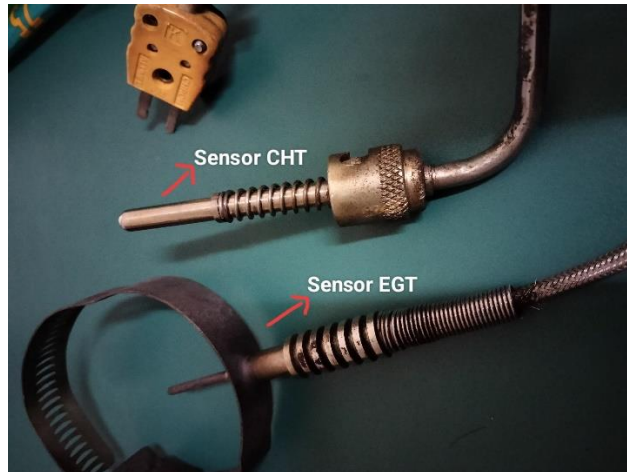
Gambar 3. 4 Contoh *engine ground run* PK BYL

3.5 CHT dan EGT

Dalam turbine engine, Suhu Gas Buang (EGT), kadang-kadang disebut sebagai Suhu Outlet Turbin (TOT), adalah suhu gas buang turbin saat meninggalkan unit turbin. Temperatur gas diukur dengan sejumlah termokopel yang dipasang di aliran pembuangan dan disajikan pada pengukur dek penerbangan dalam derajat Fahrenheit atau derajat Celcius.

Dalam piston engine, EGT adalah pengukuran suhu gas buang di manifold buang. Karena suhu gas buang bervariasi dengan perbandingan bahan bakar dan udara yang masuk ke dalam silinder, ini dapat digunakan sebagai dasar untuk mengatur campuran bahan bakar/udara yang masuk ke mesin. Sebaliknya,

EGT yang tinggi tidak menunjukkan bahwa mesin berada di bawah tekanan yang berlebihan. CHT hanya menunjukkan bahwa banyak energi dari bahan bakar yang terbuang keluar pipa *exhaust* daripada diekstraksi dalam bentuk energi mekanik yang dikirim ke propeller. EGT tinggi tidak menjadikan patokan terhadap umur panjang mesin.



Gambar 3. 5 Sensor *CHT* dan *EGT*

3.6 Flight Control

Flight control adalah salah satu sistem dalam pesawat terbang untuk mengendalikan pesawat selama terbang.

Flight control dibagi atas tiga kelompok:

1. *Primary flight control*

Primary flight control surface adalah kemudi utama pada pesawat terbang, Bagian-bagian yang termasuk dalam *primary flight control surface*:

- a. *Aileron* untuk gerak pesawat miring kiri dan miring kanan(*Rolling*) terhadap sumbu *longitudinal axis*.
- b. *Elevator* untuk gerak pesawat *pitching* atau naik dan turun pesawat.
- c. *Rudder* untuk belok kanan dan belok kiri (*yawing*) terhadap sumbu *vertical axis*.

Sumbu yang terhubung pada *primary flight control* adalah:

- a. *Longitudinal axis*

b. *Lateral axis*

c. *Vertical axis*

2. *Secondary flight control*

Meliputi bermacam-macam *spoiler*, *flap*, dan *tab airfoil* kecil yang dipasang pada bagian *trailing edge* dari *primary flight control*. Fungsinya untuk membantu *pilot* dalam mengoperasikan *primary flight control*. *Primary flight control* (kemudi utama) meliputi *aileron*, *elevator* dan *rudder*.

3. *Auxiliary flight control* (kemudi bantu)

Meliputi *speed brake*, *slat*, *leading edge slot* dan *slot*. Pada pesawat terbang dikenal tiga macam gerakan dasar yaitu:

A. Gerakan naik turun (*pitching*) merupakan gerakan mengangguk atau gerakan ke atas dan ke bawah dari *nose* pesawat, *pitching* bergerak pada sumbu *lateral* pesawat.

B. Gerakan berguling (*rolling*) merupakan gerakan berguling dari pesawat (*roll*), *rolling* bergerak pada sumbu *longitudinal* pesawat.

C. Gerakan berputar (*yawing*) merupakan gerakan menggeleng atau *nose* pesawat bergerak ke kiri dan ke kanan.

3.7 Fuel System

Fuel System adalah komponen yang berfungsi untuk mendistribusikan *fuel* dari *fuel tank* ke dalam masing – masing *cylinder* melalui *injection servo* sesuai dengan jumlah yang dibutuhkan dan waktu yang tepat agar *engine* dapat bekerja dengan baik dan dapat menghasilkan performa yang diinginkan. secara garis besar berikut komponen *aircraft fuel system* beserta fungsinya terdiri dari :

1. *Fuel Tank*

Sesuai namanya *fuel tank* berfungsi sebagai wadah *fuel* yang terletak di bagian kedua *wing* dekat dengan *flap*. Didalam *fuel tank* terdapat *screen*, *fuel quantity indicator*, *vent* dan *drain*. *Indicator fuel quantity* berfungsi untuk mengukur jumlah *fuel* pada *fuel tank*, pada pesawat Cessna 172S menggunakan *can bus type* sebagai *fuel quantity indicator*. *Screen* di dalam *fuel tank* berfungsi untuk menyaring *FOD*. *vent* berfungsi untuk masuknya udara agar *fuel tank* tidak kempot pada saat *fuel* menuju ke *engine*. *Drain* digunakan pada saat

preflight yang berfungsi untuk memeriksa dan memastikan *fuel* tidak tercampur dengan air.

2. *Fuel selector*

Fuel selector digunakan untuk pilot untuk memilih menggunakan pada kedua *fuel tank*. Pada *fuel selector* pilot bisa memilih *left*, *both*, dan *right*. Didalam *fuel selector* juga terdapat drain.

3. *Fuel Reservoir Tank*

Komponen tersebut berfungsi sebagai wadah *fuel* setelah *fuel* melewati *fuel selector*. Selain itu *fuel reservoir tank* juga berfungsi sebagai wadah *return* dari *fuel control unit*.

4. *Auxiliary Pump*

Auxiliary pump menggunakan *electrical* yang berfungsi untuk *priming* pada saat menjelang *engine ground run test* serta digunakan pada saat *emergency* ketika *go around*.

5. *Fuel Shutoff Valve*

Komponen tersebut berfungsi seperti kran air yang membuka dan menutup aliran *fuel*.

6. *Fuel Strainer*

Fuel trainer berfungsi sebagai penyaring atau *filter*, komponen tersebut juga memiliki *drain* yang berfungsi memastikan *fuel* tidak terkontaminasi dengan air. Perbedaan dari *fuel trainer* dengan *screen* pada *fuel tank* adalah diameter, diameter *screen* lebih besar dari pada *fuel stainer*.

7. *Engine Driven Fuel Pump*

Komponen tersebut berfungsi untuk memompa *fuel* dari *fuel trainer* menuju *fuel distribution valve* atau *manifold*, *engine driven fuel pump* digerakan oleh *engine*.

8. *Fuel Injection Servo*

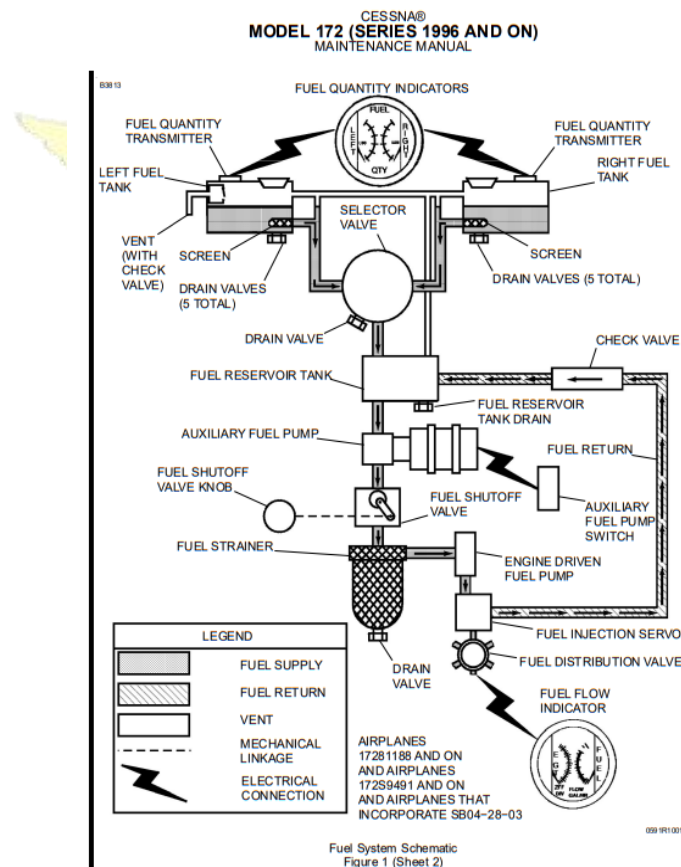
Fuel Injection Servo atau nama lainnya *fuel control unit* guna untuk mengatur komposisi *fuel* menuju *cylinder*. Contoh apabila *engine* membutuhkan 25 *fuel* sedangkan *output engine driven pump* 125 maka yang ada di *fuel injection servo*

ada 100 *fuel* lalu dibagi ke 4 *cylinder*, sisanya dari *engine driven pump return* ke *reservoir*.

9. *Fuel distribution valve*

Setelah aliran *fuel* melewati *fuel injection servo* kemudian aliran *fuel* menuju ke *fuel distribution valve* yang berfungsi untuk penghubung aliran *fuel* ke *cylinder*. Didalam *fuel distribution valve* terdapat *sensor fuel flow indicator* yang berfungsi untuk mengetahui jumlah aliran *fuel* menuju ke *cylinder*. Penjelasan fungsi semua komponen tersebut sesuai dengan gambar 3.6 tentang *fuel system schematic*.

Cessna 172-S memiliki tipe *engine Lycoming 10-360-L2A*, yang mensyaratkan bahwa jenis *fuel* yang diperbolehkan untuk digunakan adalah AVGAS 100LL (berwarna biru) / AVGAS 100 (berwarna hijau).



Gambar 3. 6 *Fuel System Schematic*

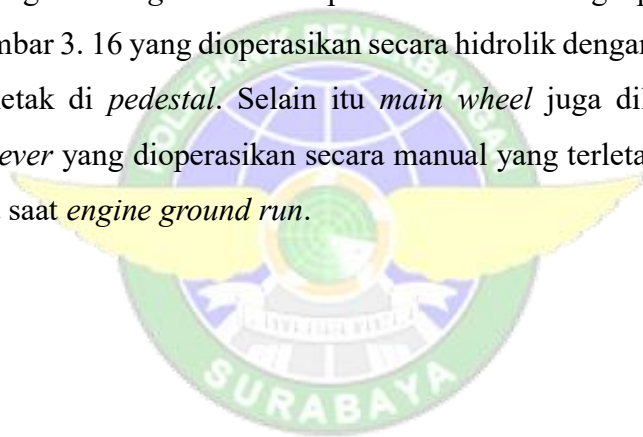
sumber: *AMM 28-20-00 page 3*

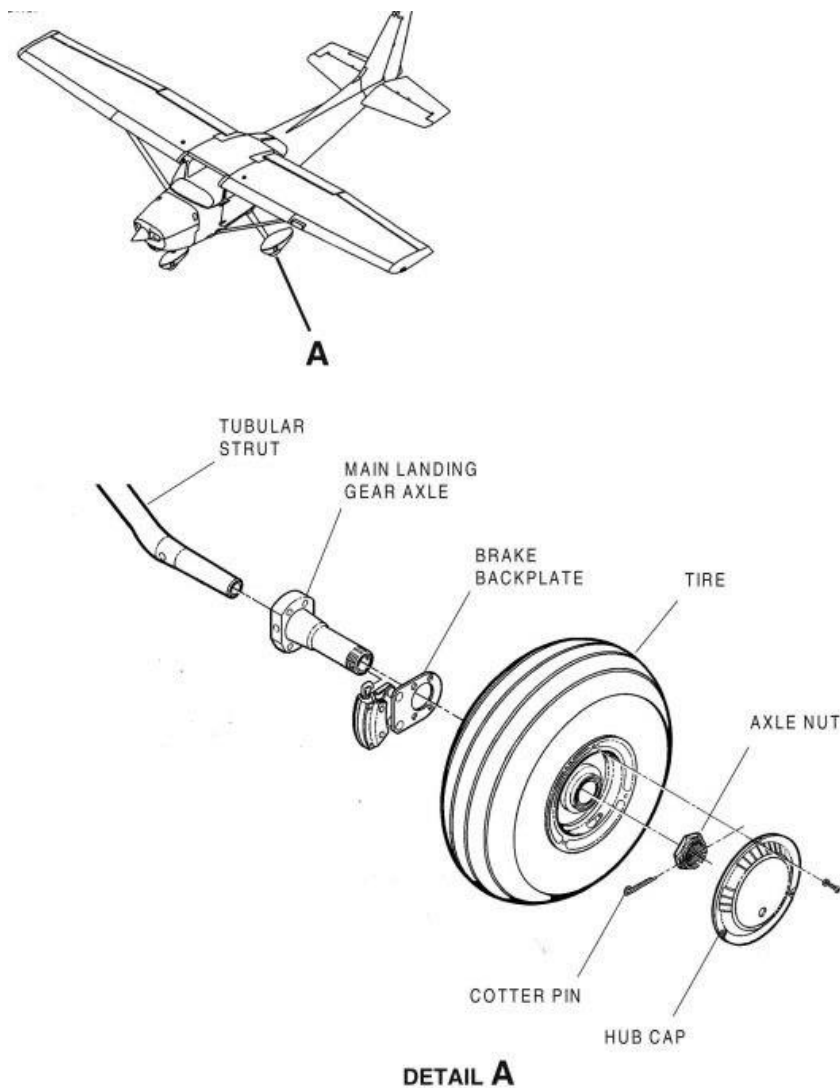
3.7 Vacuum Pump

Vacuum adalah salah satu komponen yang ada di pesawat yang berfungsi untuk menggerakkan *artificial horizon*, *heading indicator*, serta *turn and bank indicator* dengan cara menghisap udara. Prinsip kerja dari *vacuum pump* bekerja ketika *engine running*, *accessories gear box* memutar *impulse coupling* pada *vacuum pump* sehingga brush di dalam komponen *vacuum pump* berputar secara sentrifugal menghisap udara di dalam cabin kemudian hisapan udara melalui *gyro filter* guna untuk menyaring debu setelah itu hisapan udara memutar gimbal pada *gyro indicator*. *Vacuum pump* bekerja secara normal sekitar 4,5-5,5 inhg pada rpm 1200.

3.8 Main Wheel Gear

Main wheel gear adalah salah satu komponen pesawat yang berfungsi agar pesawat bisa bergerak di *ground*. Setiap *main wheel* dilengkapi dengan *brake* seperti pada gambar 3. 16 yang dioperasikan secara hidrolik dengan cara menginjak pedal yang terletak di *pedestal*. Selain itu *main wheel* juga dilengkapi dengan *parking brake lever* yang dioperasikan secara manual yang terletak di bawah *yoke* digunakan pada saat *engine ground run*.





Gambar 3. 7 komponen dari *main wheel*

Sumber AMM 32-40-00 page 202

Wheel pada pesawat Cessna 172S Skyhawk sesuai dengan standard AMM harus bertekanan 42 psi guna untuk menopang berat dari pesawat, sesuai dengan AMM at chapter 5 tentang *maintenance limit*, *main wheel* diinspeksi setiap 50 *hours*, akan tetapi setiap hari *engineer* menginspeksi pada saat *preflight* sesuai prosedur.

BAB 4

PELAKSANAAN OJT

4.1 Lingkup Pelaksanaan OJT

Pelaksanaan On The Job Training (OJT) dilaksanakan menyesuaikan dengan kegiatan yang sedang berjalan di kampus Akademi Penerbang Indonesia Banyuwangi sebagai berikut:

4.2 Waktu dan Tempat

On The Job Training (OJT), dilaksanakan dengan data sebagai berikut :

Peserta : Taruna Politeknik Penerbangan Surabaya
Jumlah : 14 (empat belas) orang
Waktu : 01 April 2024 sampai dengan 30 Juni 2024
Tempat : API Banyuwangi

4.3 Jadwal Kegiatan

Pelaksanaan *On The Job Training (OJT)* bagi taruna program studi D3 Teknik Pesawat Udara angkatan 7 (Bravo) secara intensif dimulai sejak tanggal 01 April 2024 sampai dengan 30 Juni 2024 di Hanggar C Akademi Penerbang Indonesia Banyuwangi.

Pada tabel 4.1 ditunjukan jadwal kegiatan selama pelaksanaan *On The Job Training*. Dikarenakan jumlah peserta *On The Job Training (OJT)* 14 orang, maka dibagi menjadi 2 grup yaitu Grup A, dan Grup B dimana masing-masing grup terdiri dari 7 orang. Adapun waktu pelaksanaannya dibagi menjadi shift pagi mulai pukul 05.30 – 14.00 WIB dan shift siang mulai pukul 08 .00 – 16.00 WIB yang dilaksanakan setiap hari Senin-Jumat dan libur untuk hari Sabtu-Minggu.

Tabel 4. 1 Jadwal Kegiatan On The Job Training (OJT)

Tanggal	Shift	Kegiatan
1-april-2024	Pagi	Pengenalan Tempat OJT
2-april-2024	Pagi	<i>Curve</i>
3-april-2024	Pagi	1. PK-BYM <i>Service Flaps Fail To Retract</i> 2. PK-APB, <i>Inspection 50 Hours</i>
4-april-2024	Pagi	1. PK-BYD <i>Replace Fuel Shutoff Valve Control Cable</i> 2. PK-APK, <i>Inspection 50 Hours</i>
5-april-2024	Pagi	1. PK-APE, <i>Inspection 50 Hours</i>
6-april-2024	Libur	Libur Idul Fitri
7-april-2024	Libur	Libur Idul Fitri
8-april-2024	Libur	Libur Idul Fitri
9-april-2024	Libur	Libur Idul Fitri
10-april-2024	Libur	Libur Idul Fitri
11-april-2024	Libur	Libur Idul Fitri
12-april-2024	Libur	Libur Idul Fitri
13-april-2024	Libur	Libur Idul Fitri
14-april-2024	Libur	Libur Idul Fitri
15-april-2024	Libur	Libur Idul Fitri
16-april-2024	Siang	<i>Curve</i>
17-april-2024	Siang	<i>Curve</i>
18-april-2024	Siang	<i>Curve</i>
19-april-2024	Siang	<i>Curve</i>
20-april-2024	Libur	<i>Weekend</i>
21-april-2024	Libur	<i>Weekend</i>
22-april-2024	Siang	1. PK-APE <i>Refueling</i>
23-april-2024	Siang	1. PK-ARY - <i>Replace Rockerbox Gasket Due To Oil Leak</i> <i>- Inspection 100 Hours</i>
24-april-2024	Siang	1. PK-ARX <i>Inspection 100 Hours</i> 2. PK-APF <i>Replace Magneto</i>
25-april-2024	Siang	
26-april-2024	Siang	1. PK-BYC <i>Fill and Bleed System Due To Lack Of Fluid In Master Cylinder Brake System</i>
27-april-2024	Libur	<i>Weekend</i>
28-april-2024	Libur	<i>Weekend</i>
29-april-2024	Pagi	1. PK-BYM <i>Preflight dan Engine Ground Run</i>
30-april-2024	Pagi	2. PK-APD <i>Inspection 100 Hours</i>

Tabel 4. 2 Rekap Data Kegiatan OJT Bulan Mei 2024

Tanggal	Shift	Kegiatan
1-Mei -2024	Libur	Hari Buruh
2-Mei -2024	Pagi	1. PK-APB <i>Preflight</i> dan <i>Engine Ground Run</i>
3-Mei -2024	Pagi	1. PK-APP <i>Inspection 100 Hours</i>
4-Mei -2024	Libur	<i>Weekend</i>
5-Mei -2024	Libur	<i>Weekend</i>
6-Mei -2024	Siang	1. Pk-BYD Refueling, Refill Oil
7-Mei -2024	Siang	1. PK-BYS <i>Inspection 100 Hours</i>
8-Mei -2024	Siang	1. PK-BYL <i>Replace Plenum Cap</i> dan <i>Replace Horizon Gyro</i> 2. PK-BYJ <i>Replace Vacuum Pump</i>
9-Mei-2024	Libur	Libur Kenaikan Isa Al masih
10-Mei-2024	Libur	Libur Kenaikan Isa Al masih
11-Mei-2024	Libur	<i>Weekend</i>
12-Mei-2024	Libur	<i>Weekend</i>
13-Mei-2024	Pagi	1. PK-BYL <i>Pitot tube servicing</i> 2. PK-APA <i>Replace antenna</i>
14-Mei-2024	Pagi	Sakit
15-Mei-2024	Pagi	1. PK-APF <i>Replace main wheel</i>
16-Mei-2024	Pagi	1. PK-APB <i>Preflight</i> dan <i>Engine Ground Run</i>
17-Mei-2024	Pagi	1. PK-BYL <i>Engine External Magneto Timing</i> 2. PK-APD <i>Inspection 50 hours</i>
18-Mei-2024	Libur	<i>Weekend</i>
19-Mei-2024	Libur	<i>Weekend</i>
20-Mei-2024	Siang	1. PK-BYR <i>Refueling</i> dan <i>Refill Oil</i>
21-Mei-2024	Siang	1. PK-ARX - <i>Cleaning Oil Temperature</i> - <i>Servicing Magneto Timing</i> - <i>Clean Spark Plug</i>
22-Mei-2024	Siang	1. PK-APD <i>Refueling</i> dan <i>Refill Oil</i>
23-Mei-2024	Libur	Libur Hari Raya Waisak
24-Mei-2024	Libur	Libur Hari Raya Waisak
25-Mei-2024	Libur	<i>Weekend</i>
26-Mei-2024	Libur	<i>Weekend</i>
27-Mei-2024	Pagi	1. PK-APA <i>Inspection 100 Hours</i> 2. PK-APF <i>Inspection 50 Hours</i>
28-Mei-2024	Pagi	1. PK-BYS <i>Inspection 50 Hours</i> 2. PK-BYR <i>Inspection 50 Hours</i>
29-Mei-2024	Pagi	1. PK-APC <i>Preflight</i> dan <i>Engine Ground Run</i>
30-Mei-2024	Pagi	1. PK-BYJ <i>Inspection 50 Hours</i>
31-Mei-2024	Pagi	1. PK-BYC <i>Inspection 50 Hours</i>

Tabel 4. 3 Rekap Data Kegiatan OJT Bulan Juni 2024

Tanggal	Shift	Kegiatan
1-Juni-2024	Libur	Hari Lahir Pancasila
2-Juni-2024	Libur	Weekend
3-Juni-2024	Siang	1. PK-BYL <i>Inspection 100 Hours</i>
4-Juni-2024	Siang	1. PK-BYD <i>Servicing Seat Adjustable Height Broken</i> 2. PK-APC <i>Replace CHT dan EGT IN Cylinder 2</i>
5-Juni-2024	Siang	1. PK-BYL <i>Refueling, Refill Oil</i>
6-Juni-2024	Siang	1. PK-BYC <i>Servicing Spring Seat Broken</i>
7-Juni-2024	Siang	1. PK-BYD <i>Inspection 100 Hours</i>
8-Juni-2024	Libur	Weekend
9-Juni-2024	Libur	Weekend
10-Juni-2024	Pagi	1. PK-ARX <i>Replace Right Magneto In Left Engine Due To Drop Exceed 150</i>
11-Juni-2024	Pagi	1. PK-APD <i>Preflight dan Engine Ground Run</i>
12-Juni-2024	Pagi	1. PK-APD <i>Inspection 100 Hours</i>
13-Juni-2024	Pagi	1. PK-ARX <i>Servicing High Oil Temperature</i>
14-Juni-2024	Pagi	1. PK-APF <i>Inspection 100 Hours</i>
15-Juni-2024	Libur	Weekend
16-Juni-2024	Libur	Weekend
17-Juni-2024	Libur	Libur Idul Adha
18-Juni-2024	Libur	Libur Idul Adha
19-Juni-2024	Siang	1. PK-APC <i>Refueling, Refill Oil</i>
20-Juni-2024	Siang	1. PK-APO - <i>Servicing light indicator up And Down Landing Gear</i> - <i>Servicing Low Vacuum</i> 2. PK-BYR <i>Inspection 100 Hours</i>
21-Juni-2024	Siang	1. PK-BYM <i>Refueling, Refill Oil</i>
22-Juni-2024	Libur	Weekend
23-Juni-2024	Libur	Weekend
24-Juni-2024	Pagi	1. PK-APF <i>Replace Left Main Wheel</i> 2. PK-BYP <i>Inspection 50 Hours</i>
25-Juni-2024	Pagi	1. PK-BYS <i>Replace Left Main Wheel</i> 2. PK-APP <i>Fill Bleed System Due To Lack Of Fluid</i> 3. PK-APL <i>Inspection 50 Hours</i>
26-Juni-2024	Pagi	1. PK-BYC <i>Engine External Magneto Timing</i>
27-Juni-2024	Pagi	1. PK-APD <i>Preflight dan Engine Ground Run</i>
28-Juni-2024	Pagi	Pengambilan Nilai Oleh Instruktur OJT

Dari banyaknya *daily activity report* selama OJT di API Banyuwangi seperti: *line maintenance*, *aircraft structure (heavy maintenance)*, dan *engine* kemudian penulis merekap kegiatan tersebut mulai dari bulan april sampai juni. Pada kegiatan *line maintenance* penulis memperoleh 46 hari secara efektif di API

Banyuwangi, penulis melakukan kegiatan *line maintenance* yang terdiri dari: *preflight*, *ground run*, *refueling*, *refill oil*, kegiatan tersebut dilakukan dalam pengawasan *engineer*. Selain itu ada salah satu kegiatan *line maintenance* pada tanggal 03-april-2024 dilakukan *servicing flaps* karena *flaps fail to retract* pada pesawat PK-BYM di *apron*, *servicing* tersebut dilakukan oleh *engineer* berdasarkan referensi AMM.

Pada kegiatan *aircraft structure (heavy maintenance)* penulis memperoleh 18 hari secara efektif di API Banyuwangi, penulis melakukan kegiatan *aircraft structure (heavy maintenance)* yang terdiri dari beberapa *trouble* baik *engineer* menemukan *trouble* pada *preflight* dan *engine ground run* atau *engineer* mendapatkan laporan dari pilot tersebut seperti pada tanggal 25-06-2024 penulis melakukan *replace left main wheel* pada pesawat PK-BYS yang dilakukan dalam pengawasan *engineer*, kegiatan tersebut dilakukan ketika *engineer* menemukan *wheel spot* yang kemungkinan disebabkan oleh penggunaan jam terbang atau *hard landing*.

kegiatan *engine* di dalam *daily activity report* penulis memperoleh 20 hari secara efektif di API Banyuwangi, kegiatan *engine* di dalam *daily activity* adalah *schedule maintenance* atau inspeksi, kegiatan tersebut dilakukan berdasarkan *maintenance limit* di *ata chapter 5* seperti pada tanggal 27-05-2024 dilakukan *inspection 100 hours* pada pesawat APA, kegiatan inspeksi yang dilakukan oleh penulis tersebut meliputi *flight control cable inspection*, *engine oil change*, *clean air filter*, *clean spark plug* dll. Kegiatan tersebut dilakukan dalam pengawasan *engineer* dan sesuai dengan AMM.

Bedasarkan semua kegiatan penulis selama OJT di API banyuwangi diperoleh 51 hari OJT secara efektif. Hal tersebut dikarenakan banyaknya libur selama OJT di API Banyuwangi seperti libur hari raya, hari buruh, dll.

Tabel 4. 4 Kegiatan selama OJT di API Banyuwangi

NO	JAM	KEGIATAN
1	05.15	Persiapan kerja (<i>shift</i> pagi)
2	05.30 - 06.45	<i>Prepare pesawat, Pre-flight check, Ground Run, Refueling</i>
3	06.45 - 07.30	<i>Break dan briefing</i>
4	07.30 - 11.00	Waktu kerja
5	11.00 - 13.00	Ishoma
6	13.00 - 15.00	Waktu kerja (<i>shift</i> siang)
7	15.00 - 16.00	Ishoma
8	16.00 - 17.15	Closing, refueling
9	17.15 - 18.15	Ishoma
10	18.15 - 19.00	Persiapan pulang

4.4 Permasalahan

Pelaksanaan On The Job Trainig di Hanggar C Akademi Penerbang Indonesia Banyuwangi. Terdapat beberapa trouble yang ditemukan pada saat melaksanakan perawatan pesawat taruna dilibatkan secara langsung dalam kegiatan Inspeksi dan perawatan pesawat Cessna 172S sehingga peserta menjumpai beberapa studi kasus yang diangkat menjadi materi penulisan laporan, studi kasus diambil dari satu kegiatan disetiap minggunya sebagai bentuk laporan kegiatan *On The Job Training* di Akademi Penerbang Indonesia Banyuwangi. Secara garis besar selama mengikuti kegiatan *On The Job Training* di Akademi Penerbang Indonesia Banyuwangi, peserta OJT mempelajari tahapan mengenai perawatan pesawat udara, Adapun urutan kerangka kerja dijelaskan sebagai berikut:

1. Identifikasi Masalah

Identifikasi masalah adalah tahap sebelum melaksanakan suatu perbaikan maupun perawatan pesawat udara langkah pertama yang harus dilakukan yaitu identifikasi *troubleshooting* dimana teknisi akan mendiagnosa letak maupun sumber permasalahan sebelum masuk ke tahap selanjutnya.

2. *Disassembly*

Disassembly adalah kebalikan daripada proses *assembly* dimana *disassembly* merupakan kegiatan melepas komponen-komponen maupun bagian pesawat yang ada di suatu system pesawat udara. Berdasarkan buku *Aircraft Power Plant Chapter 10* menyatakan bahwa perlu persiapan sebelum melaksanakan proses *assembly* seperti pengadaan wadah tempat menyimpan, bagian-bagian individu harus ditata secara teratur pada meja kerja saat dipindahkan. Untuk menjaga dari kerusakan dan untuk mencegah kehilangan.

3. *Inspection*

Inspection adalah ketika pesawat digunakan maka umur penggunaan dari suatu komponen akan berkurang sehingga salah satu tujuan dari *aircraft inspection* adalah mengganti atau memperbaiki *parts* tersebut serta memastikan kondisi pesawat laik terbang ketika dioperasikan. Semua kegiatan inspeksi sudah ditentukan melalui *task card* dan dilakukan berdasarkan *Maintenance Manual Cessna 172 Skyhawk*.

4. *Repair/Servicing*

Repair adalah kegiatan memperbaiki atau mengganti suatu bagian yang rusak, perbaikan biasanya meliputi penggantian suku cadang yang terdapat pada *aircraft system*.

5. *Re-assembly/installation*

Reassembly adalah tahap dimana teknisi memasang kembali semua komponen yang telah di *servicing* maupun diperbaiki. Langkah *installation* semua bagian pesawat sudah tertulis pada *Aircraft Maintenance Manual*.

6. *Functional Test*

Functional test adalah tahap setelah semua kegiatan penggantian maupun perbaikan komponen pesawat telah selesai tahap berikutnya adalah melakukan pengamatan terhadap kinerja daripada part yang diganti ataupun diperbaiki.

7. *Return to service*

Return to service adalah tahap ketika *maintenance* telah selesai dilaksanakan dan hasil *functional test* melalui *ground run* menyatakan bahwa

semuanya layak, maka pesawat tersebut dikatakan *RTS (Return To Service)* sehingga dapat dioperasikan kembali

Ke tujuh point tersebut diimplementasikan oleh saya kami selama proses pelaksanaan On The Job Training (OJT) berlangsung. Berikut akan disajikan studi kasus memenuhi ke-7 point-poin di atas dan *servicing* yang telah dikerjakan:

1. *Replace CHT*
2. *Flap Stuck*
3. *Broken shear coupling vacuum pump*
4. *Replace Fuel Shutoff Valve Control Cable*
5. *Replace Left Main Wheel*

4.5 Penyelesaian Masalah

Dari beberapa *troubleshooting* yang ditemukan pada saat pelaksanaan On The Job Training di Akademi Penerbangan Indonesia Banyuwangi maka harus diberikan beberapa penanganan dari beberapa masalah tersebut, yaitu sebagai berikut:

4.5.1 *Replace CHT due to Defect Burn*

1. Identifikasi masalah

EGT *Red Cross* karena masalah pada engine parameter yang terjadi pada pesawat Cessna 172-S dengan registrasi PK-BYC. Permasalahan ini diketahui pada saat melakukan *Engine Ground Run Up* Rabu pagi hari tanggal 26 Juni 2024. Dengan hal ini *engineer* mengambil keputusan untuk menarik pesawat kembali ke hanggar untuk dilaksanakan *unschedule maintenance* atau perawatan tidak terjadwal.

2. *Disassembly*

Setelah melakukan identifikasi permasalahan maka selanjutnya adalah inspeksi dengan melepas EGT dan CHT seperti gambar 4.1 untuk mengetahui sumber permasalahan pada *engine parameter redcross*. Pelaksanaan *disassembly* ini dilaksanakan sesuai dengan *Aircraft Maintenance Manual (AMM) Chapter 77*.

3. *Inspection*

Inspection yang dilakukan adalah mengecek *connector* dari GEA dan membersihkannya dengan *contact cleaner*, tidak ada masalah pada konektor kemudian dipasang kembali. Tapi setelah dibersihkan *indicator* EGT dan CHT masih mengalami *red cross*, kemudian tindakan selanjutnya *engineer* mengganti/*replace* EGT dan CHT sesuai dengan *Maintenance Manual Chapter 77* seperti pada gambar 4.2, hasilnya ternyata sudah tidak terjadi *redcross* pada EGT dan CHT.



Gambar 4. 1 Inspeksi sensor *CHT*

4. *Replace*

Setelah dilakukan inspeksi kemudian *engineer* memutuskan *replace* sensor *CHT* dikarenakan *wire* yang menghubungkan sensor ke *GEA 71* mengalami *burn*.



Gambar 4. 2 melepas sensor CHT



gambar 4. 3 Cylinde Heat Temperatur (CHT)

5. *Reassembly*

Langkah untuk *reassembly* sesuai dengan *Maintenance Manual Chapter 77*. Pada umumnya giat ini merupakan pemasangan kembali CHT pada gambar 4.3 ke *engine* dan menutup kembali panel yang di buka.



gambar 4. 4 Reassembly CHT

6. *Functional Test*

Setelah pelaksanaan *reassembly* maka dilakukan tes fungsi guna memastikan CHT yang sudah terpasang benar-benar berfungsi secara normal.

7. *Return To Service*

Setelah semua prosedur dilakukan dan komponen berfungsi Kembali secara normal maka permasalahan ini dapat dinyatakan telah selesai dan pesawat bisa digunakan untuk latihan penerbangan.

4.5.2 *Flap Stuck*

1. Identifikasi Masalah

Salah satu pesawat Cessna 172S dengan nomer registrasi PK-BYJ setelah mendapat laporan dari taruna rizki dari prodi penerbang pada Selasa pagi tanggal 11 Juni 2024, pada kedua *flap* mengalami *malfunction* yang menandakan *flap* tidak dapat bergerak yang dapat mempengaruhi *Flight control surfaces* dengan keadaan tidak normal, ternyata penyebabnya akibat *motor flap* tidak berfungsi sehingga mengakibatkan kedua *flap* pada *flight control surfaces* tidak bergerak. Terjadinya *malfunction* pada kedua *flap* akan mempengaruhi kinerja dari pada *flight control surfaces*.

CESSNA®
MODEL 172 (SERIES 1996 AND ON)
 MAINTENANCE MANUAL

FLAP CONTROL SYSTEM - TROUBLESHOOTING

1. Troubleshooting

NOTE: Due to remedy procedures in the following chart, it may be necessary to re-rig the system after trouble has been corrected.

TROUBLE	PROBABLE CAUSE	REMEDY
BOTH FLAPS FAIL TO MOVE	Open circuit breaker.	Reset and check continuity. Replace breaker if defective.
	Defective switch.	Place jumper across switch. Replace if defective.
	Defective motor.	Remove and bench test motor. Replace if defective.
	Broken or disconnected wires.	Run a continuity check of wiring. Connect or repair wiring.
	Defective or disconnected transmission.	Connect transmission. Remove, bench test and replace transmission if defective.
	Defective limit switch.	Check continuity of switches. Replace switches found defective.
BINDING IN SYSTEM AS FLAPS ARE RAISED AND LOWERED.	Cables not riding on pulleys.	Check visually. Route cables correctly over pulleys.
	Bind in drive pulleys.	Check drive pulleys in motion. Replace drive pulleys found defective.
	Broken or binding pulleys.	Check pulleys for free rotation or breaks. Replace defective pulleys.
	Frayed cable.	Check visually. Replace defective cable.
	Flaps binding on tracks.	Observe flap tracks and rollers. Replace defective parts.
LEFT FLAP FAILS TO MOVE	Disconnected or broken cable.	Check cable tension. Connect or replace cable.
	Disconnected push-pull rod.	Check visually. Attach push-pull rod.
INCORRECT FLAP TRAVEL	Incorrect rigging.	Rig correctly. Refer to Flap Control System Adjustment/Test .
	Defective operating switch.	Check continuity of switches. Replace switches found defective.

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Gambar 4. 5 AMM troubleshooting flap control system Cessna 172 Skyhawk

2. Servicing

Setelah diidentifikasi masalah engineer melakukan *servicing* dengan memberikan contact cleaner guna untuk membersihkan komponen elektronik seperti pada gambar 4. 6.



Gambar 4. 6 Flap Stuck

3. *Operational check*

Setelah dilakukan *cleaner* pada *flap* kemudian dilakukan *operational check* sesuai *AMM 27-50-00* seperti pada *flaps* dari *full up position* sampai *full down position* guna memastikan apakah sudah normal atau belum seperti.

4. *Disassembly*

Sebelum melakukan tindakan ke tahap selanjutnya hal yang harus dilakukan yaitu *disassembly* dengan melakukan prosedur sesuai *aircraft maintenance manual (AMM) chapter 27* halaman 201 yang dimulai dengan membuka panel pada *wing*, lepas *screw* pada panel, kemudian *disconnect* sumber kelistrikan. Setelah itu lepas *motor flap* dari *wing panel*.

5. *Return ro Service*

Setelah dilakukan pengecekan pada *functional test* dan hasil yang diperoleh adalah *kedua flap* tersebut telah beroperasi dengan normal, maka pesawat *Cessna 172-S PK-BYJ* dinyatakan *return to service* dan dapat dioperasikan kembali dalam kegiatan penerbangan.

4.5.3 *Broken Shear Coupling Vacuum Pump*

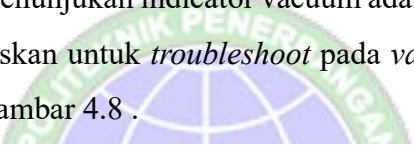
Trouble yang dialami pada *vacuum pump* kali ini adalah failed. Failed yang terjadi pada *vacuum pump* ini mengakibatkan tidak berkerjanya *vacuum pump*

meskipun saat engine menyala. Hal ini dikarenakan shear coupling yang menghubungkan gear pada vacuum pump dengan accessories gear pada engine mengalami kerusakan berupa putus atau patah. Bahan pada shear coupling ini dari berbahan hampi menyerupai plastic dan karet yang keras dan sedikit banyak untuk penggantian shear coupling baru yaitu on condition melihat kondisi *shear coupling*.

Berikut tata cara replace shear coupling pada vacuum pump:

1. *Identification*

Pesawat di identifikasi masalah pada vacuum pump diketahui pada saat dilakukan *ground run* oleh enginer sebelum pesawat di rilis terbang untuk mengecek kesiapan dan kondisi pesawat. Pada saat engine menyala pesawat PK-BYC Pada tanggal 08-05-2024 terjadi *low vacuum* pada rpm 2600 dan pada layar PFD menunjukan indicator vacuum adalah low vacuum sehingga *engineer* memutuskan untuk *troubleshoot* pada *vacuum pump* seperti pada gambar 4.7 dan gambar 4.8 .



CESSNA AIRCRAFT COMPANY
MODEL 172
MAINTENANCE MANUAL

VACUUM SYSTEM - TROUBLESHOOTING		
1. Troubleshooting		
TROUBLE	PROBABLE CAUSE	REMEDY
OIL IN DISCHARGE.	Damaged engine driven seal.	Replace gasket.
HIGH SUCTION.	Vacuum regulator filter clogged.	Check filter for obstructions.
LOW SUCTION.	Vacuum regulator leaking.	Replace vacuum regulator.
	Vacuum pump failure.	Substitute known good pump and check pump suction. Replace vacuum pump as required.
LOW PRESSURE.	Vacuum regulator leaking.	Replace safety valve.
	Vacuum pump failure.	Substitute known good pump and check pump pressure. Replace vacuum pump as required.

Gambar 4. 7 *Troubleshoot Vacumm Pump* referensi AMM 37-10-00



Gambar 4. 8 Low vacuum pada Garmin 1000

2. *Disassembly*

Pertama kali yang dilakukan tahap *disassembly* adalah melepas *cowl engine* sesuai dengan referensi AMM *chapter 71* menggunakan *tool phillip screw driver* seperti pada gambar 4.10

CESSNA®
MODEL 172 (SERIES 1996 AND ON)
 MAINTENANCE MANUAL

COWL - MAINTENANCE PRACTICES

1. Description and Operation

- A. The engine cowl consists of upper and lower sheet metal halves and upper and lower composite nose pieces. The cowl is attached to the shock mounts using quick release, quarter turn fasteners to allow for easy removal and installation. The nose pieces are attached to each other using screws and nutplates.

2. Cowl Removal/Installation

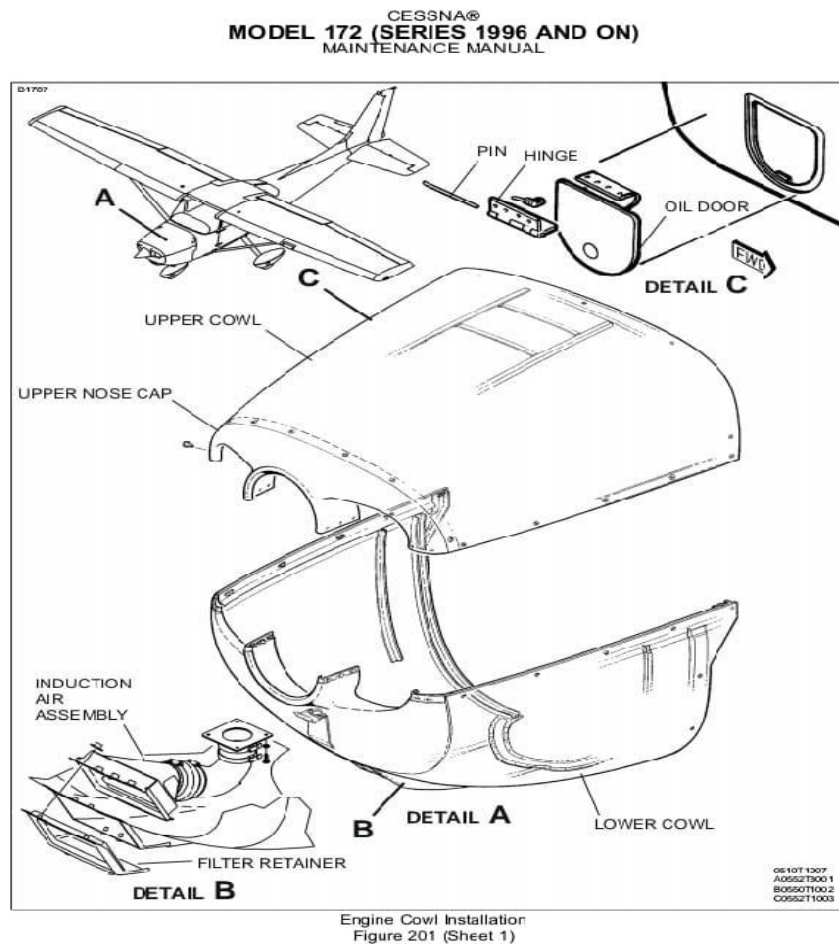
- A. Remove Cowl (Refer to Figure 201).
 - (1) Release quick release fasteners around perimeter of upper cowl.
 - (2) Remove upper cowl.
 - (3) Remove induction air filter bracket from lower cowl.
 - (4) Unscrew upper nose piece from lower nose piece.
 - (5) Release quick release fasteners around perimeter of lower cowl.
 - (6) Remove lower cowl.
- B. Install Cowl (Refer to Figure 201).
 - (1) Install lower cowl to engine area and secure using quick release fasteners.
 - (2) Install induction air filter bracket to lower cowl using quick release fasteners.
 - (3) Attach upper nose piece to lower nose piece using screws.
 - (4) Install upper cowl to engine area and secure using quick release fasteners.

3. Cowl Shock Mounts

- A. Shock Mount Adjustment/Replacement (Refer to Figure 202).
 - (1) The shock mounts are riveted to brackets, which in turn are secured to the fuselage. Mounts may be replaced as needed or adjusted with shims as shown in Figure 202.
 - (2) If new shock mounts or brackets are installed, careful measurements should be taken to ensure new parts are positioned correctly on the firewall. New parts are not pre-drilled and care should be taken to align new shock mounts with existing cowl openings. If required, sheet aluminum may be used as shim stock to provide proper cowl contour.

4. Cowl Repair

- A. For repair procedures to the cowl, refer to the Structural Repair Manual.



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71-10-00 Page 202
Apr 7/2003Gambar 4. 10 *Cowl Engine* sumber AMM 71-10-00

Setelah melepas *engine cowl* selanjutnya melepas komponen *vacuum pump* sesuai dengan AMM 37-10-00 page 201 seperti pada lampiran 7 guna untuk di inspeksi.

3. Inspeksi

Inspection dilakukan untuk mengetahui permasalahan yang ada di *vacuum pump*. Pada saat inspeksi ditemukan bahwa *shear coupling* yang ada di dalam *vacuum pump* patah yang disebabkan karena *friction*, bisa dilihat seperti pada gambar 4. 11



Gambar 4. 11 Komponen *vacuum pump*



gambar 4. 12 Shear Coupling

Setelah mengetahui permasalahan pada *vacuum pump* yakni terjadi aus dan patah pada *shear coupling* maka engineer memutuskan untuk dilakukan tindakan *replace* pada *vacuum pump*.

4. Reassembly And Install Vacuum Pump

Pasangkan kembali semua part vacuum pump dengan berurutan berdasarkan MM Cessna 172S dan siap untuk di fuctional test dengan ground run.

5. *Functional Test*

Setelah dilakukan *reassembly* kemudian dilakukan *ground run* guna untuk mengecek dan memastikan bahwa indikator *vacuum* menunjukkan normal pada 1200 rpm yaitu pada *green arc*.

6. *Return To Service*

Setelah indikator *vacuum* normal kemudian *engineer* merilis pesawat tersebut agar pesawat bisa digunakan oleh taruna penerbang.

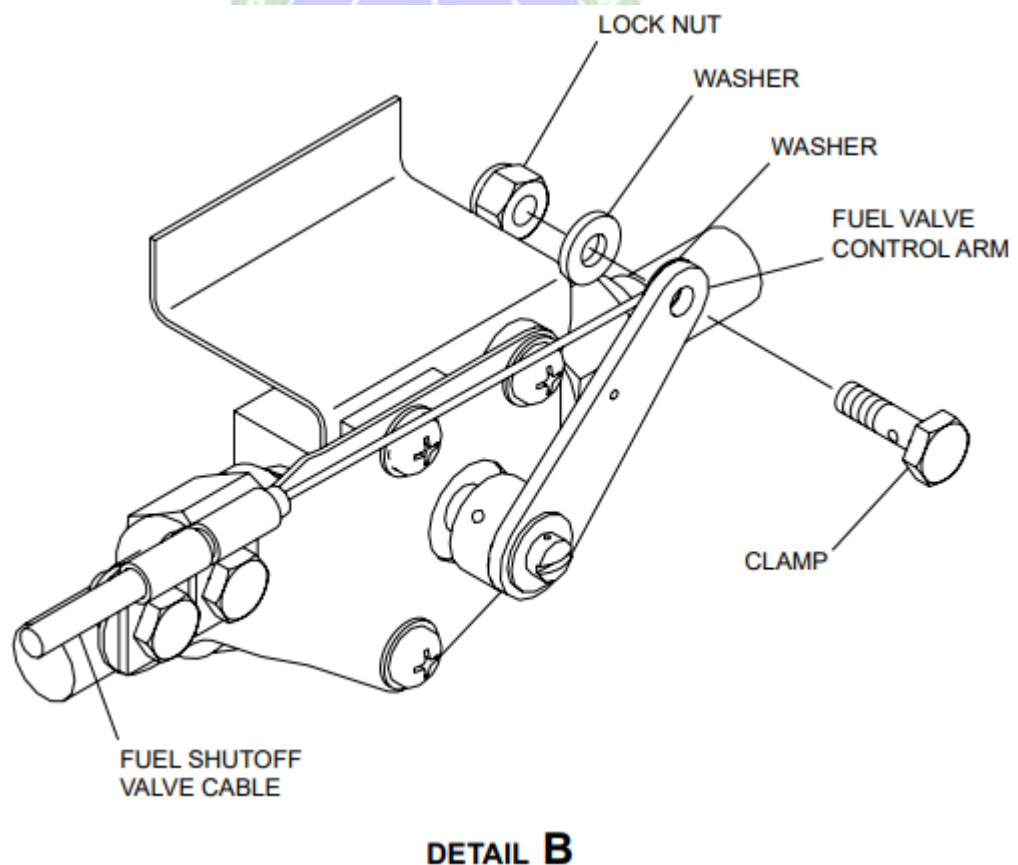
4.5.4 *Replace Fuel Shutoff Valve Control Cable*

1. Identifikasi masalah

Pada tanggal 4 april 2024 *engineer* mendapat laporan dari pilot bahwa *fuel shutoff valve control cable* terputus pada pesawat PK-BYD. Kemudian *engineer* memutuskan untuk membawa pesawat tersebut ke hanggar c guna untuk dilakukan *maintenance*.

2. *Removal*

Dilakukan *removal* guna untuk melepas karpet (*footwell carpet*) kaki dari *copilot rudder pedal* lalu lepaskan *screw* dari pelindung pedal menggunakan *screwdriver philip* dan lepaskan *lock nut* pada gambar 4. 23 menggunakan *wrench 7/16* sesuai AMM 28-20-00 page 215 seperti pada lampiran 9.



Gambar 4. 13 *Fuel shutoff control cable*

Sumber AMM Cessna 172S Skyhawk

3. *Inspection*

Setelah *screw* dan *lock nut* terlepas selanjutnya dilakukan inspeksi pada gambar 4.24 ternyata *shutoff valve cable* nya putus dikarenakan pilot terlalu kencang saat menarik.



Gambar 4. 14 *Fuel shutoff valve control cable* terputus

4. *Replace*

Pada gambar 4.25 setelah dilakukan inspection kemudian engineer memutuskan untuk melakukan *replace* pada *fuel shutoff valve control cable* dengan yang baru sesuai dengan part number yaitu S1533-9



Gambar 4. 15 *Replace pada fuel shutoff valve control cable* sesuai part Number S1533-9

5. *Installation*

Setelah dilakukan *replace* pada *fuel shutoff valve control cable* dengan yang baru kemudian pada gambar 4. 26 *engineer* melakukan *installation* pada komponen sesuai dengan AMM ata chapter 28-20-00 page 215, pasang *lock nut* lalu kencangkan hingga minimum 15 inch/pouuds dan pastikan *control arm* bergerak dengan lancar . Setelah itu kencangkan *screw* dan pasang kembali *copilot's rudder pedal shields*.



Gambar 4. 16 *Installation fuel shutoff valve control cable* sesuai AMMCessna 172S Skyhawk.

6. *Functional Test*

Setelah dilakukannya *installation* pada *shutoff valve cable*, selanjutnya melakukan *functional test* pada *shutoff valve* dengan cara *pull* and *push fuel shutoff control cable knob* untuk memastikan sambungan kabel bergerak dengan lancar .

7. *Return to Service*

Setelah melakukan *functional test* dan memeriksa bahwa *shutoff valve* tidak terdapat masalah dan berfungsi dengan baik, maka pesawat Cessna 172 S PK - BYD dapat dikatakan layak terbang dan kembali beroperasi.

4.5.5 *Replace Left Main Wheel*

1. Identifikasi masalah

Pada tanggal 25 juni 2024 *engineer* menemukan *defect* pada saat inspeksi preflight secara visual pagi hari, ditemukan bahwa *left main wheel* pada pesawat PK-BYS mengalami *spot* atau aus seperti pada gambar 4. 33,

sehingga *engineer* memutuskan untuk membawa pesawat tersebut ke hanggar c untuk dilakukan *replace* pada *left main wheel*.



Gambar 4. 17 *Left main wheel spot*

2. *Disassembly*

Dilakukan *disassembly* sesuai AMM ata chapter 32-40-00 seperti pada lampiran 10 di mulai dengan memberi *jack* pada *strut left main wheel* pesawat setelah itu melepas *cotter pin* dengan *cutting plier*; lalu lepas *nut* menggunakan *special tool* seperti pada gambar 4. 34, lalu melepas *bolt* yang terpasang pada *back plate assembly* dan *pressure plate assembly* lalu melepas *backing plate* lalu menarik *wheel* dari *axle* lalu membuka *tire* seperti pada gambar 4. 35.



Gambar 4. 18 *Tool* yang digunakan untuk *melepas left main wheel*



Gambar 4. 19 *Disassembly left main wheel PK-BYS*

3. *Replace*

Setelah *disassembly* kemudian langkah selanjutnya memberi *mont talkum talc* pada *main wheel* yang berfungsi menyerap kadar air didalam *wheel* seperti pada gambar 4. 36. setelah itu dilakukan pemasangan *main wheel* dengan yang baru seperti pada gambar 4. 36. Kemudian diberi tekanan 42 *psi*



Gambar 4. 20 Memberi *mont talkum talc* pada *wheel*



Gambar 4. 21 Setelah dilakukan *replace* pada *main wheel*

4. *Functional Test*

Dilakukan oleh *engineer* dengan cara *double check* oleh *engineer* lain guna untuk memastikan *left main wheel* tersebut sudah sesuai dengan standard FAA.

5. *Return to Service*

Setelah selesai *functional test* dan *left main wheel* bekerja dengan baik kemudian *engineer* merilis pesawat tersebut dan layak untuk digunakan.

BAB 5

PENUTUP

5.1 Kesimpulan

Kesimpulan adalah rangkaian pernyataan pernyataan ringkas dari hasil umum suatu laporan atau karya ilmiah, sehingga sifat dan hasil pernyataan tersebut dapat dilihat dari kesimpulan. Menurut pedoman penulisan laporan OJT terbaru, kesimpulan dibagi menjadi dua bagian, yaitu pada subbab 5.1.1 dan 5.1.2. Mengenai kesimpulan tentang pelaksanaan OJT secara keseluruhan dan studi kasus yang disajikan.

5.1.1 Kesimpulan Permasalahan On The Job Training

1. Berdasarkan uraian pada bab 4, dapat disimpulkan bahwa Troubleshoot ini terjadi akibat kerusakan pada sensor *thermocouple* dari *Cylinder Head Temperature* yang mengakibatkan tidak terbaca nya CHT atau Engine parameter *redcross*. sesuai system *Hierarchy* dapat ditemukan permasalahannya.
2. Berdasarkan uraian pada bab 4, dapat disimpulkan bahwa Permasalah yang dialami adalah vacuum pump pada Cessna 172S mengalami failed, setelah di identifikasi permasalahan tersebut ditemukan bahwa shear coupling pada vacuum pump patah yang mengakibatkan tidak dapat berputarnya vacuum pump. Komponen di replace dengan part yang baru dan dikerjakan oleh enginer yang memiliki rating Cessna 172S.
3. Berdasarkan uraian pada bab 4,dengan judul *flap stuck* dapat disimpulkan bahwa *troubleshoot* pada *flaps stuck*, diakibatkan *cable* yang menyambungkan *motor* ke *flap* kotor sehingga bisa menyebabkan *flaps* gagal untuk *retract* atau tidak merespon.
4. Bedasarkan uraian bab 4 dapat disimpulkan bahwa *servicing fuel shutoff valve control cable* pada pesawat PK-BYD tanggal 4 april 2024 disebabkan oleh pilot taruna yang menarik komponen tersebut terlalu kencang sehingga komponen tersebut putus.

5. Berdasarkan uraian bab 4 dapat disimpulkan bahwa *servicing left main wheel* pada pesawat PK-BYS tanggal 25 juni 2024 disebabkan *hard landing* dan umur penggunaan pada komponen tersebut sehingga komponen tersebut mengalami *spot* atau aus.

5.1.2 Kesimpulan Terhadap Pelaksanaan OJT

Berdasarkan kegiatan *On The Job Training* yang telah dilaksanakan dari tanggal 01 April 2024 sampai dengan 30 Juni 2024, maka dapat diambil kesimpulan bahwa kegiatan *On The Job Training* dapat meningkatkan mutu pembelajaran sekaligus dapat memberikan pengetahuan yang belum bisa didapatkan selama pembelajaran di Politeknik Penerbangan Surabaya.

Pelaksanaan *On The Job Training* menjadi gambaran dalam dunia kerja sesungguhnya sehingga dapat mengembangkan wawasan dan kreatifitas yang dapat menumbuhkan profesionalisme dengan memahami keadaan lapangan saat terjadi suatu permasalahan ataupun perbaikan pesawat dibawah pengawasan teknisi dan engineer di Hanggar C API Banyuwangi. Selain itu, kegiatan *On The Job Training* dapat menambah kedisiplinan untuk mematuhi aturan yang berlaku selama belajar dan tanggung jawab disetiap tindakan maupun keputusan yang kita ambil.

5.2 Saran

5.2.1 Saran Terhadap Permasalahan On The Job Training

Melakukan inspeksi dengan teliti baik itu pada komponen *major* maupun *minor* agar dapat diketahui bagian *part* apa saja yang mungkin terjadi *troubleshooting* atau kerusakan pada pesawat terbang. Ketika telah ditemukan sebuah kerusakan maka segera berkoordinasi dengan pada engineer maupun teknisi agar segera dilakukan *maintenance* dan selalu menggunakan *maintenance manual* pada saat melakukan perbaikan pada suatu *part* yang telah diidentifikasi oleh para *engineer* telah mengalami kerusakan. Selain itu sebelum melaksanakan inspeksi, pahami setiap langkah yang ada pada panduan Maintenance Manual.

5.2.2 Saran terhadap Pelaksanaan OJT

Berikut ini beberapa saran yang dapat diberikan kepada Politeknik Penerbangan Surabaya dan Akademi Penerbang Indonesia Banyuwangi :

1. Kepada taruna yang akan melaksanakan *On the Job Training* (OJT) selanjutnya diharapkan dapat memanfaatkan waktu yang sebaikbaiknya untuk mendapat bimbingan, lebih aktif dalam bimbingan, dan mendokumentasikan setiap permasalahan-permasalahan yang didapat selama melaksanakan OJT.
2. Kepada pihak Politeknik Penerbangan Surabaya agar dapat memberikan penambahan waktu OJT bagi taruna kepada pihak Akademi Penerbang Indonesia Banyuwangi. Karena dengan waktu 3 bulan masih dirasa sangat kurang dalam menggali ilmu dan pengalaman praktik kerja lapangan.

5.3 Manfaat On The Job Training

1. Berdasarkan pengalaman selama *On the Job Training*, saya mendapatkan pengalaman yang belum saya dapatkan secara langsung, mengenai *line maintenance* seperti *preflight*, *add oil*, *refuelling*, *inspection 50 dan 100 hours*, *cleaning*, dan yang terakhir melakukan *postflight*.
2. Pada pengalaman saya selama *On the Job Training*, saya mendapatkan pengalaman yang belum saya dapatkan secara langsung, mengenai permasalahan dan cara menangani *Trouble* pada pesawat yang on flight.

DAFTAR PUSTAKA

AMM (*Aircraft Maintenance Manual*) Cessna 172 S, ATA Chapter 37 *vacuum system*.

AMM (*Aircraft Maintenance Manual*) Piper Seneca V, ATA Chapter 74 Ignition.
Aircraft Powerplants, 9th, Thomas W. Wild

Modul Garmin1000

Garmin1000 nav III *line maintenance manual*

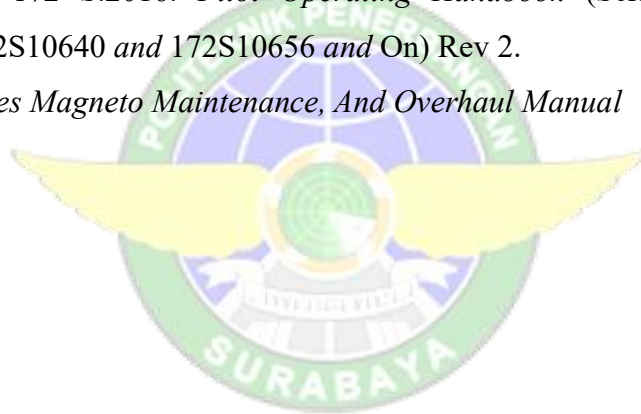
Pedoman *On The Job Training*, (2020, April). Politeknik Penerbangan Surabaya
Cessna 172S. *Training Guide Book*

FAA. 2023. *Aviation Maintenance Technician Handbook– Airframe*

FAA. 2023. *Aviation Maintenance Technician Handbook– Powerplant*

Model Cessna 172 S. 2016. *Pilot Operating Handbook* (Serials 172S10468, 172S10507, 172S10640 and 172S10656 and On) Rev 2.

4300/6300 Series Magneto Maintenance, And Overhaul Manual



LAMPIRAN

Lampiran 1 Task card inspection 50 hours

	KEMENTRIAN PERHUBUNGAN BADAN PENGEMBANGAN SDM PERHUBUNGAN AKADEMI PENERBANG INDONESIA BANYUWANGI AMO 145D-1006	
Aircraft Condition Assessment/ Pre maintenance Report		
AIRCRAFT TYPE/SN :	CA280/19254772	AIRCRAFT REG. :
CUSTOMER :	API BWI	AIRFRAME HRS :
WORKORDER :		192:32.
<i>This form is for use on projects following a receipt inspection of the aircraft. It is signed when completed by AMO-API representative and customer or customer representative</i>		

Forward Fuselage:

1. Spinner : OK
2. Nose wheel well : OK
3. Nose wheel tire : OK
4. Windshield : OK
5. Pitot/TAT probes : OK
6. AOA Transducer : OK
7. Static ports : OK
8. Propeller : OK
9. Antennas : OK
10. Fuselage skin : OK
11. Cabin windows : OK

Aft Fuselage:

1. Engine cowlings : OK
2. Engine Inlets : OK
3. Antennas : OK
4. Aft equipment Bay : OK
5. Tail cone : OK

Wings:

1. Landing /Taxi Lights : OK
2. Leading Edge : OK
3. Wing Tips : OK
4. Static Wicks : OK
5. Fuel Vents : OK
6. Flaps/Ailerons : OK
7. Fuel Cap/Panel : OK
8. Main Wheel Strut : OK
9. Main Wheel tire : OK
10. Wing Skin : OK

Empenage:

1. Vertical Stabilizer : OK
2. Rudder : OK
3. Horizontal Stabilizer : OK
4. Elevators : OK
5. Static Wicks : OK
6. Tabs : OK

Hidden Damage

: N/A

Inspected by
Date

Youni M.T
09/11/2021

Signature
AMEL Number

Youni M.T
1040

FORM NO: 145D-1006-007 (November, 2022)



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-1006

WORK ORDER

ORDER NUMBER	:							
A/C Type	:	C172SP	A/C Serial	:	172S11772	A/C Reg	:	PK-APK-
A/C Total flying hours	:	1952.22						
Place	:	API Bw1	Date completed	:	9/9/20			

Description of work :	ARC	☒ Resolved	☐ Additional Work Required
1.	50 Hours Inspection sheet Cessna 172 Skyhawk		
2.			
3.			
4.			
5.			

Mechanic	Engineer	Inspector
1. Ichant S.	1. Yoni an.y	1. S. Aji
2. Purno R.	2. Erpan F	2. Fajar M.
3. Hardih F-S	3. Dnus	3. Yogi 4.
4. Eko.p		
5.		
6.		
7.		
8.		
9.		
10.		

Tool & Equipment

Description	Qty	Validity
General tools	1	

 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
--	--

50 HOURS INSPECTION SHEET CESSNA 172 SKYHAWK	Due at :
	Interval : A, L
	Insp. Operation : 1, 13
	Type Inspection : Routine/Schedule
	Form No. : 141-014-172S50

Aircraft Registration :	DE-APK	Aircraft Hours :	1952:32
Aircraft Serial Number :	192511273	Engine Hours :	1952:32
Date :	11/11/2024	Propeller Hours :	1694:57
Reference :	Cessna 172S MM	Manual Revision :	Rev. 27
	5-12-01 Rev. 27		15 Jan 2024
	5-12-13 Rev. 27		

ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
PRELIMINARY				
000000	Record anomalies into log book or equivalent document for corrective action.	000	✓	
000000	Check aircraft compliance with airworthiness directives, service bulletins and service letters.	000	✓	
000000	Check expiry date of life-limited parts : - Airframe - Equipment and hoses	000	✓	
ATA 21 – AIR CONDITIONING				
214002	Heater Components, Inlets, and Outlets - Inspect all lines, ducts, clamps, seals, and gaskets for condition, restriction, and security.	211	✓	
214003	Cabin Heat and Ventilation Controls - Check freedom of movement through full travel. Check friction locks for proper operation.	211	✓	Inspection Operation 1
ATA 23 – COMMUNICATIONS				
231001	Communication Antennas and Cables - Inspect for security of attachment, connection, and condition.	210	✓	Inspection Operation 3
235001	Microphones, Headsets, and Jacks - Inspect for cleanliness, security, and evidence of damage.	211	✓	Inspection Operation 1
235002	Microphone Push-To-Talk Switch - Clean the pilot's and copilot's microphone switches. Refer to Chapter 23, NAV/COM - Maintenance Practices.	222, 223	✓	
ATA 24 – ELECTRICAL POWER				
242001	Alternator, Mounting Bracket, and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment. Check belt tension.	120	✓	
243003	General Airplane and System Wiring - Inspect for proper routing, chafing, broken or loose terminals, general condition, broken or inadequate clamps, and sharp bends in wiring.	210	✓	Inspection Operation 1
246001	Switch and Circuit Breaker Panel, Terminal Blocks, and Junction Boxes - Inspect wiring and terminals for condition and security.	222	✓	Inspection Operation 1

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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 24 – ELECTRICAL POWER (Cont...)				
246002	Power Junction Box - Check operation and condition. Check availability and condition of spare fuse (if applicable).	222		
ATA 25 – EQUIPMENT/FURNISHINGS				
251001	Seats - Examine the seats to make sure they are serviceable and installed correctly. Make sure the seat stops and adjustment mechanism operate correctly. Examine the seat recline control and attaching hardware to make sure the hardware and lock are not damaged and are correctly installed. Lubricate the threads of the Seat Crank Handle Assembly with MIL-PRF-81322 general purpose grease.	211		
251101	Restraint System, front and rear - Check belts for thinning, fraying, cutting, broken stitches, or ultra-violet deterioration. Check system hardware for security of installation.	211		
256001	Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with CASR Part 91.207.	310		
ATA 26 – FIRE PROTECTION				
262001	Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation, and servicing date.	230		
ATA 27 – FLIGHT CONTROLS				
271001	Aileron Controls - Check freedom of movement and proper operation through full travel.	120, 520, 620		
271002	Ailerons and Cables - Check operation and security of stops. Check cables for tension, routing, fraying, corrosion, and turnbuckle safety. Check travel if cable tension requires adjustment or if stops are damaged. Check fairleads and rub strips for condition.	120, 520, 620		Inspection Operation 3
271003	Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys, and Pulley Brackets - Check condition, operation, and security of attachment.	520, 620		
271004	Ailerons and Hinges - Check condition, security, and operation.	520, 620		
271005	Control Wheel Lock - Check general condition and operation.	222		
271006	Control Yoke - Inspect pulleys, cables, bearings, and turnbuckles for condition and security.	222, 223		
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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 27 – FLIGHT CONTROLS (Cont...)				
272001	Rudder - Check internal surfaces for corrosion, condition of fasteners, and balance weight attachment.	340		Inspection Operation 3
272002	Rudder - Inspect the rudder skins for cracks and loose rivets, rudder hinges for condition, cracks and security; hinge bolts, nuts, hinge bearings, hinge attach fittings, and bonding jumper for evidence of damage and wear, failed fasteners, and security. Inspect balance weight for looseness and the supporting structure for damage.	340		
272003	Rudder, Tips, Hinges, Stops, Clips and Cable Attachment - Check condition, security, and operation.	340		
272004	Rudder Pedals and Linkage - Check for general condition, proper rigging, and operation. Check for security of attachment.	230		Inspection Operation 1
272005	Rudder Control - Check freedom of movement and proper operation through full travel. Check rudder stops for damage and security.	340		
273001	Elevator Control - Check freedom of movement and proper operation through full travel.	222, 223		
273002	Elevator Control System - Inspect pulleys, cables, sprockets, bearings, chains, and turnbuckles for condition, security, and operation. Check cables for tension, routing, fraying, corrosion, and turnbuckle safety.	222, 223		
273003	Elevator, Hinges, Stops, and Cable Attachment - Check condition, security, and operation.	320, 330		
273101	Elevator Trim System - Check cables, push-pull rods, bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc. for proper routing, condition, and security.	224, 240, 310		
273102	Elevator Trim Control and Indicator - Check freedom of movement and proper operation through full travel. Check pulleys, cables, sprockets, bearings, chains, and turnbuckles for condition and security. Check cables for tension, routing, fraying, corrosion, and turnbuckle safety.	224, 240, 310		Inspection Operation 1
273103	Elevator Trim Tab and Hinges - Check condition, security, and operation.	224		

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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 27 – FLIGHT CONTROLS (Cont..)				
273104	Elevator Trim Tab Actuator - Examine the free play limits. Refer to Chapter 27, Elevator Trim Control - Maintenance Practices, Trim Tab Free Play Inspection. If the free play is more than the permitted limits, lubricate the actuator and examine the free play limits again. If the free play is still more than the permitted limits, replace the actuator.	320		
273106	Elevator Trim Tab Stop Blocks - Inspect for damage and security.	240		Inspection Operation 1
275001	Flaps - Check tracks, rollers, and control rods for security of attachment. Check rod end bearings for corrosion. Check operation.	510, 610		
275002	Wing Flap Control - Check operation through full travel and observe Flap Position Indicator for proper indication.	221		Inspection Operation 1
275003	Flap Structure, Linkage, Bellcranks, Pulleys, and Pulley Brackets - Check for condition, operation and security.	510, 610		Inspection Operation 3
275004	Flaps and Cables - Check cables for proper tension, routing, fraying, corrosion, and turnbuckle safety. Check travel if cable tension requires adjustment.	510, 610		Inspection Operation 3
275005	Flap Motor, Actuator, and Limit Switches - Check wiring and terminals for condition and security. Check actuator for condition and security.	610		Inspection Operation 3
275006	Flap Actuator Threads - Clean and lubricate. Refer to Chapter 12, Flight Controls - Servicing.	610		
ATA 28 – FUEL				
282001	Fuel System - Inspect plumbing and components for mounting and security.	510, 610		
282002	Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation.	510, 610		
282003	Fuel Selector Valve - Check controls for detent in each position, security of attachment, and for proper placarding.	224		
282004	Integral Fuel Bays - Check for evidence of leakage and condition of fuel caps, adapters, and placards. Using quick drains, ensure no contamination exists. Check quick drains for proper shut off.	510, 610		Check quick drains for proper shut off.
282005	Fuel Reservoir - Using quick drain, ensure no contamination exists.	510, 610		
282006	Fuel Selector - Using quick drain, ensure no contamination exists.	224		

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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 28 – FUEL (Cont...)				
282007	Fuel Strainer, Drain Valve, and Controls - Check freedom of movement, security, and proper operation. Disassemble, flush, and clean screen and bowl.	510, 610		
ATA 31 – INDICATING/RECORDING SYSTEMS				
311001	Instruments - Check general condition and markings for legibility.	220		
311003	Instrument Lines, Fittings, Ducting, and Instrument Panel Wiring - Check for proper routing, support, and security of attachment.	220		Inspection Operation 1
ATA 33 – LIGHTS				
331001	Instrument and Cabin Lights - Check operation, condition of lens, and security of attachment.	220, 211, 221		
334001	Navigation, Beacon, Strobe, and Landing Lights - Check operation, condition of lens, and security of attachment.	340, 520, 620		
ATA 34 – NAVIGATION				
341101	Static System - Inspect for security of installation, cleanliness, and evidence of damage.	210		Inspection Operation 3
341103	Pitot Tube and Stall Warning System - Examine for condition and obstructions and make sure the anti-ice heat operates correctly. Apply vacuum to stall warning horn scoop assembly and make sure horn is audible.	510		
342101	Magnetic Compass - Inspect for security of installation, cleanliness, and evidence of damage.	225		Inspection Operation 1
345001	Instrument Panel Mounted Avionics Units (Including Audio Panel, VHF Nav/Com(s), ADF, GPS, Transponder, and Compass System) - Inspect for deterioration, cracks, and security of instrument panel mounts. Inspect for security of electrical connections, condition, and security of wire routing.	225		Inspection Operation 1
345002	Avionics Operating Controls - Inspect for security and proper operation of controls and switches and ensure that all digital segments will illuminate properly.	225		Inspection Operation 1
345003	Navigation Indicators, Controls, and Components - Inspect for condition and security.	220, 225		Inspection Operation 1
345004	Navigation Antennas and Cables - Inspect for security of attachment, connection, and condition.	310		Inspection Operation 1
ATA 52 – DOORS				
521001	Doors - Inspect general condition. Check latches, hinges, and seals for condition, operation, and security of attachment.	210		Inspection Operation 1
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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 52 – DOORS (Cont...)				
531001	Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint, and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.	210		
531003	Internal Fuselage Structure - Inspect bulkheads, doorposts, stringers, doublers, and skins for corrosion, cracks, buckles, and loose rivets, bolts and nuts.	211		Inspection Operation 1
ATA 55 – STABILIZERS				
551001	Horizontal Stabilizer and Tailcone structure - Inspect bulkheads, spars, ribs, and skins, for cracks, wrinkles, loose rivets, corrosion, or other damage. Inspect horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings, and tips.	320, 330		
551002	Horizontal Stabilizer and Tips - Inspect externally for skin damage and condition of paint.	320, 330		
553001	Vertical Stabilizer Fin - Inspect bulkheads, spars, ribs, and skins for cracks, wrinkles, loose rivets, corrosion, or other damage. Inspect vertical stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings, and tip.	340		
553002	Vertical Stabilizer Fin and Tailcone - Inspect externally for skin damage and condition of paint.	340		
ATA 56 – WINDOWS				
561001	Windows and Windshield - Inspect general condition. Check latches, hinges, and seals for condition, operation, and security of attachment.	210		
ATA 57 – WINGS				
571001	Wing Surfaces and Tips - Inspect for skin damage, loose rivets, and condition of paint.	510, 520, 610, 620		
571002	Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets, and condition of paint.	510, 610		
571003	Wing Access Plates - Check for damage and security of installation.	510, 520, 610, 620		Inspection Operation 3
571004	Wing Spar and Wing Strut Fittings - Check for evidence of wear. Check attach bolts for indications of looseness and retorque as required.	510, 520, 610, 620		Inspection Operation 3
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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 57 – WINGS (Cont...)				
571005	Wing Structure - Inspect spars, ribs, skins, and stringers for cracks, wrinkles, loose rivets, corrosion, or other damage.	510, 520, 610, 620		Inspection Operation 3
ATA 61 – PROPELLERS				
611001	Spinner - Check general condition and attachment.	110		
611003	Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion, or other damage.	110		
611005	Propeller Mounting - Check for security of installation.	110		
ATA 71 – POWERPLANTS				
711001	Cowling - Inspect for cracks, dents, other damage and security of fasteners.	120		New Revision Model 172 MM
712002	Do a check of the engine mount and the oil filler tube for evidence of contact. Refer to SB99-71-02.	120		New Revision Model 172 MM
716001	Alternate Induction Air System - Check for obstructions, operation, and security.	120		
716002	Induction System - Check security of clamps, tubes, and ducting. Inspect for evidence of leakage.	120		
716003	Induction Airbox, Valves, Doors, and Controls - Remove air filter and inspect hinges, doors, seals, and attaching parts for wear and security. Check operation.	120		
716004	Induction Air Filter - Remove and clean. Inspect for damage and service.	120		
722001	Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.	120		
722003	Hoses, Metal Lines, and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.	120		
723003	Engine Baffles and Seals - Check condition and security of attachment.	120		
ATA 76 – ENGINE CONTROLS				
761001	Engine Controls and Linkage - Examine the general condition and freedom of movement through the full range. Complete a check for the proper travel, security of attachment, and for evidence of wear. Complete a check of the friction lock and vernier adjustment for proper operation. Complete a check to make sure the throttle, fuel mixture, and propeller governor arms operate through their full arc of travel.	120, 225		The maximum linear freeplay is 0.050 Inch.
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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX	AKADEMI
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 78 – EXHAUST				
781001	Exhaust System - Inspect for cracks and security. Special check in area of heat exchanger. Refer to Chapter 78, Exhaust system - Maintenance Practices.	120		
ATA 79 – OIL				
791001	Engine Oil – Drain oil sump and oil cooler. Check for metal particles or foreign material in filter, on sump drain plug and on engine suction screen. Replace filter, and refill with recommended grade aviation oil	120		They are complete every 50 hours or 4 (four) months, whichever occurs first.
792001	Oil Cooler - Check for obstructions, leaks, and security of attachment.	120		
ATA 80 – STARTING				
801002	Bendix Drive Starter Assembly - Clean and lubricate starter drive assembly.	120		
FINAL STEP				
000000	Perform a test run-up. Record parameters (at engine shutdown).	000		
000000	After the test run-up, remove upper and lower engine cowlings and check for leaks (oil, fuel, air, exhaust gases). If everything is normal, reinstall the engine cowlings and check that they are correctly locked.	000		
000000	Record this inspection in the aircraft maintenance files (airframe, engine and propeller log books).	000		
End of 50 Hours Inspection Sheet				

End of 50 Hours Inspection Sheet

Component Replacement Record				
No.	Description	S/N OFF	S/N ON	Sign

Inspection Result :

Corrective Action :

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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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Return to Service

I hereby certify that aircraft PK - APH..... has been maintained and inspected in accordance with the Cessna 172S Approved Maintenance Program and met requirements with applicable of Civil Aviation Safety Regulation and is determined to be airworthy condition.

Issued at : <u>APR BUN</u>	Date : <u>04/04/20</u>
Amel No. : <u>10290</u>	Signature : <u>[Signature]</u>

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Lampiran 2 Task card inspection 100 hours



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-1006

WORK ORDER			
ORDER NUMBER	:		
A/C Type	:	C172	A/C Serial : 172S11709
A/C Total flying hours	:	1697.15	A/C Reg : ple-BYS
Place	:	API BOWI	Date completed : 9 Mar 2024

Description of work :	ARC	Resolved	Additional Work Required
1. Temporary Storage Return to service Cessna 172 Skyhawk			
2.			
3.			
4.			
5.			

Mechanic	Engineer	Inspector
1. Eko P.	1. Erfan	1. Yosi A.
2. Fadzlan	2. Mardha	2. Fajar A.
3. Hendrik	3. Dimas	
4. Ickhsan	4. Aji S.	
5.	5. Yover	
6.		
7.		
8.		
9.		
10.		

[illegible]



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-1006

Part & material

Description	Qty	Validity

Chief of Quality Control

(PAULUS SAMBADA)

Banyuwangi, / /

Chief of Engineering

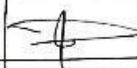
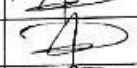
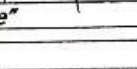
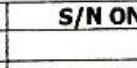
(ANDHIKA BAGASPATI)

 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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TEMPORARY STORAGE RETURN TO SERVICE CESSNA 172 SKYHAWKS	141-014-172S-TRTS
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Aircraft Registration	: BK-BYS	Aircraft Hours	: 1097.15
Aircraft Serial Number	: 172S11709	Engine Hours	: 1097.15
Date	:	Propeller Hours	: 1097.15
Reference	: Cessna 172S MM	Manual Revision	: Rev. 27
	10-30-00 Rev. 27		15 Jan 2024

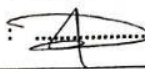
Temporary storage is defined as airplane in a nonoperational status for a maximum of 90 days. After temporary storage, use the following procedures to return the airplane to service:

ITEM CODE NUMBER	TASK	ENGINEER SIGN	REMARKS
1	Remove airplane from blocks and check tires for proper inflation. Check for proper nose gear strut inflation.		
2	Check battery and install.		
3	Check that oil sump has proper grade and quantity of engine oil.		
4	Service induction air filter and remove warning placard from propeller.		
5	Remove materials used to cover openings.		
6	Remove spark plugs from engine.		
7	While spark plugs are removed, rotate propeller several revolutions to clear excess oil from cylinders.		
8	Clean, gap and install spark plugs. Torque spark plugs to the proper value and connect spark plug leads.		
9	Check fuel strainer. Remove and clean filter screen if necessary. Check fuel tanks and fuel lines for moisture and sediment. Drain enough fuel to eliminate any moisture and sediment.		
10	Perform a thorough preflight inspection, then start and warm up engine.		

"End of Temporary Storage Return To Service"

Component Replacement Record				
No.	Description	S/N OFF	S/N ON	Sign

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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
Inspection Result : OK	
Corrective Action : N/A	
<i>Return to Service</i> I hereby certify that aircraft PK - has been maintained and inspected in accordance with the Cessna 172S Approved Maintenance Program and met requirements with applicable of Civil Aviation Safety Regulation and is determined to be airworthy condition. Issued at : <u>API Baw</u> Date : Amel No. : <u>60246</u> Signature : 	

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	KEMENTERIAN PERHUBUNGAN BADAN PENGEMBANGAN SDM PERHUBUNGAN AKADEMI PENERBANG INDONESIA BANYUWANGI AMO 145D-1006	
Aircraft Condition Assessment/ Pre maintenance Report		
AIRCRAFT TYPE/SN :		AIRCRAFT REG. :
CUSTOMER :		AIRFRAME HRS :
WORKORDER :		
<i>This form is for use on projects following a receipt inspection of the aircraft. It is signed when completed by AMO-API representative and customer or customer representative</i>		

Forward Fuselage:

- | | |
|---------------------|----|
| 1. Spinner | OK |
| 2. Nose wheel well | OK |
| 3. Nose wheel tire | OK |
| 4. Windshield | OK |
| 5. Pitot/TAT probes | OK |
| 6. AOA Transducer | OK |
| 7. Static ports | OK |
| 8. Propeller | OK |
| 9. Antennas | OK |
| 10. Fuselage skin | OK |
| 11. Cabin windows | OK |

Aft Fuselage:

- | | |
|----------------------|----|
| 1. Engine cowlings | OK |
| 2. Engine Inlets | OK |
| 3. Antennas | OK |
| 4. Aft equipment Bay | OK |
| 5. Tail cone | OK |

Wings:

- | | |
|-------------------------|----|
| 1. Landing /Taxi Lights | OK |
| 2. Leading Edge | OK |
| 3. Wing Tips | OK |
| 4. Static Wicks | OK |
| 5. Fuel Vents | OK |
| 6. Flaps/Ailerons | OK |
| 7. Fuel Cap/Panel | OK |
| 8. Main Wheel Strut | OK |
| 9. Main Wheel tire | OK |
| 10. Wing Skin | OK |

Empenage:

- | | |
|--------------------------|----|
| 1. Vertical Stabilizer | OK |
| 2. Rudder | OK |
| 3. Horizontal Stabilizer | OK |
| 4. Elevators | OK |
| 5. Static Wicks | OK |
| 6. Tabs | OK |

Hidden Damage

N/A

Inspected by

MACHAS .P

Date

07/05/2024

Signature



AMEL Number : 10216



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-1006

WORK ORDER

ORDER NUMBER	:	
A/C Type	:	C172S
A/C Serial	:	172511705
A/C Reg	:	PK-BYS
A/C Total flying hours	:	1097:15
Place	:	Agi BWI
Date completed	:	7 Mei 2024

Description of work :	☐ ARC	☐ Resolved	☐ Additional Work Required
1.	100 Hours Inspection Sheet Cessna 172 Skylhawk		
2.			
3.			
4.			
5.			

Mechanic	Engineer	Inspector
1. Eko P.	1. Erfan	1. Yogi
2. Fadila	2. Macdha	2. Fajar M.
3. Ickball	3. Dimas	
4. Hendrik	4. Yovera	
5.	5. Aji S.	
6.		
7.		
8.		
9.		
10.		

Tool & Equipment

Description	Qty	Validity



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-10

AKADEMI PENE
BANYU
100 HOUR

Part & material

Description	Qty	Validity

Banyuwangi, / /

Chief of Quality Control

Chief of Engineering

(PAULUS SAMBADA)

(ANDHIKA BAGASPATI)

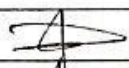
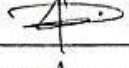
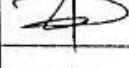
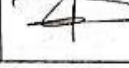
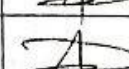
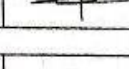
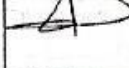
 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK
	APPENDIX

100 HOURS INSPECTION SHEET CESSNA 172 SKYHAWK

Due at :
Interval : A, B, L, U, V
Insp. Operation : 1, 2, 13, 22, 23
Type Inspection : Routine/Schedule
Form No. : 141-014-172S100

Aircraft Registration : PK-BYS
Aircraft Serial Number : 172S11705
Date : 7 Mei 2024
Reference : Cessna 172S MM
5-12-01 Rev. 27 5-12-13 Rev. 27
5-12-02 Rev. 27 5-12-22 Rev. 27
5-12-03 Rev. 27 5-12-23 Rev. 27

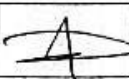
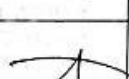
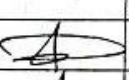
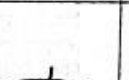
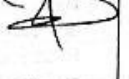
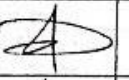
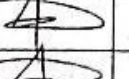
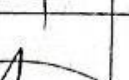
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Engine Hours : 1075.15
Propeller Hours : 1079.15
Manual Revision : Rev. 27
15 Jan 2024

ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
PRELIMINARY				
000000	Record anomalies into log book or equivalent document for corrective action.	000		
000000	Check aircraft compliance with airworthiness directives, service bulletins and service letters.	000		
000000	Check expiry date of life-limited parts : - Airframe - Equipment and hoses	000		
ATA 21 – AIR CONDITIONING				
212002	Primary Flight Display (PFD) Fan and Multi-Function Flight Display (MFD) Fan, Deck Skin Fan, and Remote Avionics Cooling Fan – Operational check. Refer to Chapter 21, Avionics Cooling – Maintenance Practices.	220, 225		Every 1 Year
214001	Cold and Hot Air Hoses - Check condition, routing, and security.	120		
214002	Heater Components, Inlets, and Outlets - Inspect all lines, ducts, clamps, seals, and gaskets for condition, restriction, and security.	211		
214003	Cabin Heat and Ventilation Controls - Check freedom of movement through full travel. Check friction locks for proper operation.	211		Inspection Operation 1
ATA 23 – COMMUNICATIONS				
231001	Communication Antennas and Cables - Inspect for security of attachment, connection, and condition.	210		Inspection Operation 3
235001	Microphones, Headsets, and Jacks - Inspect for cleanliness, security, and evidence of damage.	211		Inspection Operation 1
235002	Microphone Push-To-Talk Switch - Clean the pilot's and copilot's microphone switches. Refer to Chapter 23, NAV/COM - Maintenance Practices.	222, 223		
ATA 24 – ELECTRICAL POWER				
242001	Alternator, Mounting Bracket, and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment. Check belt tension.	120		

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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 24 – ELECTRICAL (Cont...)				
243001	Main Battery - Examine the general condition and security. Complete the applicable main battery servicing procedure. Refer to Chapter 12, Battery - Servicing.	120		New Revision Model 172 MM
243002	Main Battery Box and Cables - Clean and remove any corrosion. Examine the cables for routing, support, and security of the connections. Refer to Chapter 12, Main Battery Servicing.	120		New Revision Model 172 MM
243003	General Airplane and System Wiring - Inspect for proper routing, chafing, broken or loose terminals, general condition, broken or inadequate clamps, and sharp bends in wiring.	210		Inspection Operation 1
243004	External Power Receptacle and Power Cables - Inspect for condition and security.	120		
246001	Switch and Circuit Breaker Panel, Terminal Blocks, and Junction Boxes - Inspect wiring and terminals for condition and security.	222		Inspection Operation 1
246002	Power Junction Box - Check operation and condition. Check availability and condition of spare fuse (if applicable).	222		
ATA 25 – EQUIPMENT/FURNISHINGS				
251001	Seats - Examine the seats to make sure they are serviceable and installed correctly. Make sure the seat stops and adjustment mechanism operate correctly. Examine the seat recline control and attaching hardware to make sure the hardware and lock are not damaged and are correctly installed. Lubricate the threads of the Seat Crank Handle Assembly with MIL-PRF-81322 general purpose grease.	211		
251002	Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Inspect seat rails for cracks.	230		
251101	Restraint System, front and rear - Check belts for thinning, fraying, cutting, broken stitches, or ultra-violet deterioration. Check system hardware for security of installation.	211		
256001	Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with CASR Part 91.207.	310		
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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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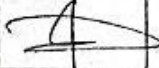
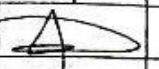
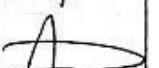
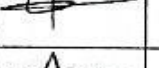
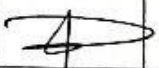
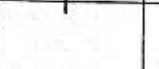
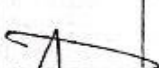
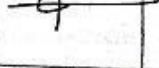
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
TA 26 – FIRE PROTECTION				
262001	Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation, and servicing date. (Applicable to Halon and Non-Halon Fire Extinguishers)	230		
ATA 27 – FLIGHT CONTROLS				
271001	Aileron Controls - Check freedom of movement and proper operation through full travel.	120, 520, 620		
271002	Ailerons and Cables - Check operation and security of stops. Check cables for tension, routing, fraying, corrosion, and turnbuckle safety. Check travel if cable tension requires adjustment or if stops are damaged. Check fairleads and rub strips for condition.	120, 520, 620		Inspection Operation 3
271003	Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys, and Pulley Brackets - Check condition, operation, and security of attachment.	520, 620		
271004	Ailerons and Hinges - Check condition, security, and operation.	520, 620		
271005	Control Wheel Lock - Check general condition and operation.	222		
271006	Control Yoke - Inspect pulleys, cables, bearings, and turnbuckles for condition and security.	222, 223		
272001	Rudder - Check internal surfaces for corrosion, condition of fasteners, and balance weight attachment.	340		Inspection Operation 3
272002	Rudder - Inspect the rudder skins for cracks and loose rivets, rudder hinges for condition, cracks and security; hinge bolts, nuts, hinge bearings, hinge attach fittings, and bonding jumper for evidence of damage and wear, failed fasteners, and security. Inspect balance weight for looseness and the supporting structure for damage.	340		
272003	Rudder, Tips, Hinges, Stops, Clips and Cable Attachment - Check condition, security, and operation.	340		
272004	Rudder Pedals and Linkage - Check for general condition, proper rigging, and operation. Check for security of attachment.	230		Inspection Operation 1
272005	Rudder Control - Check freedom of movement and proper operation through full travel. Check rudder stops for damage and security.	340		
273001	Elevator Control - Check freedom of movement and proper operation through full travel.	222, 223		
273002	Elevator Control System - Inspect pulleys, cables, sprockets, bearings, chains, and turnbuckles for condition, security, and operation. Check cables for tension, routing, fraying, corrosion, and turnbuckle safety.	222, 223		

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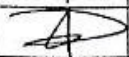
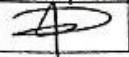
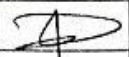
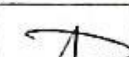
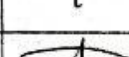
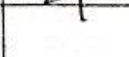
 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		AKADEMI PENERBANG INDONESIA BANYUWANGI	
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS	ITEM CODE NUMBER ATA 7
ATA 27 – FLIGHT (Cont...)					
273003	Elevator, Hinges, Stops, and Cable Attachment - Check condition, security, and operation.	320, 330			
273101	Elevator Trim System - Check cables, push-pull rods, bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc. for proper routing, condition, and security.	224, 240, 310			
273102	Elevator Trim Control and Indicator - Check freedom of movement and proper operation through full travel. Check pulleys, cables, sprockets, bearings, chains, and turnbuckles for condition and security. Check cables for tension, routing, fraying, corrosion, and turnbuckle safety.	224, 240, 310		Inspection Operation 1	
273103	Elevator Trim Tab and Hinges - Check condition, security, and operation.	224			
273104	Elevator Trim Tab Actuator - Examine the free play limits. Refer to Chapter 27, Elevator Trim Control - Maintenance Practices, Trim Tab Free Play Inspection. If the free play is more than the permitted limits, lubricate the actuator and examine the free play limits again. If the free play is still more than the permitted limits, replace the actuator.	320			
273106	Elevator Trim Tab Stop Blocks - Inspect for damage and security.	240		Inspection Operation 1	
275001	Flaps - Check tracks, rollers, and control rods for security of attachment. Check rod end bearings for corrosion. Check operation.	510, 610			
275002	Wing Flap Control - Check operation through full travel and observe Flap Position Indicator for proper indication.	221		Inspection Operation 1	
275003	Flap Structure, Linkage, Bellcranks, Pulleys, and Pulley Brackets - Check for condition, operation and security.	510, 610		Inspection Operation 3	
275004	Flaps and Cables - Check cables for proper tension, routing, fraying, corrosion, and turnbuckle safety. Check travel if cable tension requires adjustment.	510, 610		Inspection Operation 3	
275005	Flap Motor, Actuator, and Limit Switches - Check wiring and terminals for condition and security. Check actuator for condition and security.	610		Inspection Operation 3	
275006	Flap Actuator Threads - Clean and lubricate. Refer to Chapter 12, Flight Controls - Servicing.	610			
ATA 28 – FUEL					
282001	Fuel System - Inspect plumbing and components for mounting and security.	510, 610			
282002	Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation.	510, 610			
282003	Fuel Selector Valve - Check controls for detent in each position, security of attachment, and for proper placarding.	224			

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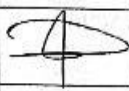
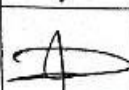
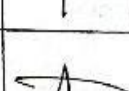
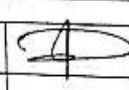
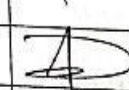
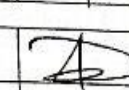
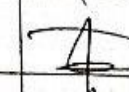
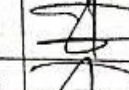
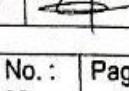
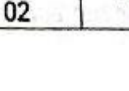
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 28 – FUEL (Cont...)				
282004	Integral Fuel Bays - Check for evidence of leakage and condition of fuel caps, adapters, and placards. Using quick drains, ensure no contamination exists. Check quick drains for proper shut off.	510, 610		Check quick drains for proper shut off.
282005	Fuel Reservoir - Using quick drain, ensure no contamination exists.	510, 610		
282006	Fuel Selector - Using quick drain, ensure no contamination exists.	224		
282007	Fuel Strainer, Drain Valve, and Controls - Check freedom of movement, security, and proper operation. Disassemble, flush, and clean screen and bowl.	510, 610		
282010	Auxiliary (Electric) Fuel Pump - Check pump and fittings for condition, operation, security.	120		
ATA 31 – INDICATING/RECORDING SYSTEMS				
311001	Instruments - Check general condition and markings for legibility.	220		
311003	Instrument Lines, Fittings, Ducting, and Instrument Panel Wiring - Check for proper routing, support, and security of attachment.	220		Inspection Operation 1
ATA 32 – LANDING GEAR				
321001	Main Landing Gear Wheel Fairings, Strut Fairings, and Cuffs - Check for cracks, dents, condition of paint, and correct scraper clearance.	721, 722		
321002	Main Gear Spring Assemblies - Examine for cracks, dents, corrosion, condition of paint or other damage. Examine for chips, scratches, or other damage that lets corrosion get to the steel spring. Examine the axles for condition and security.	721, 722		
321003	Main Landing Gear Attachment Structure - Check for damage, cracks, loose rivets, bolts and nuts and security of attachment.	721, 722		
322001	Nose Gear - Inspect torque links, steering rods, and boots for condition and security of attachment. Check strut for evidence of leakage and proper extension. Check strut barrel for corrosion, pitting, and cleanliness. Check shimmy damper and/or bungees for operation, leakage, and attach points for wear and security.	720		
322002	Nose Landing Gear Wheel Fairings - Check for cracks, dents, and condition of paint.	720		
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS	
ATA 32 – LANDING (Cont...)					
322004	Nose Gear Attachment Structure - Inspect for cracks, corrosion, or other damage and security of attachment.	720			
324001	Brakes - Test toe brakes and parking brake for proper operation.	230			
324002	Brakes, Master Cylinders, and Parking Brake - Check master cylinders and parking brake mechanism for condition and security. Check fluid level and test operation of toe and parking brake. Refer to Chapter 12, Hydraulic Brakes - Servicing.	224, 230		Inspection Operation 4	
324004	Tires - Check tread wear and general condition. Check for proper inflation.	720, 721, 722			
324005	Wheels, Brake Discs, and Linings - Inspect for wear, cracks, warps, dents, or other damage. Check wheel through-bolts and nuts for looseness.	721, 722			
324006	Wheel Bearings - Clean, inspect and lube.	720, 721, 722		Inspection Operation 4	
325001	Nose Gear Steering Mechanism - Check for wear, security, and proper rigging.	720		Inspection Operation 4	
ATA 33 – LIGHTS					
331001	Instrument and Cabin Lights - Check operation, condition of lens, and security of attachment.	220, 211, 221			
334001	Navigation, Beacon, Strobe, and Landing Lights - Check operation, condition of lens, and security of attachment.	340, 520, 620			
ATA 34 – NAVIGATION					
341101	Static System - Inspect for security of installation, cleanliness, and evidence of damage.	210		Inspection Operation 3	
341103	Pitot Tube and Stall Warning System - Examine for condition and obstructions and make sure the anti-ice heat operates correctly. Apply vacuum to stall warning horn scoop assembly and make sure horn is audible.	510			
342101	Magnetic Compass - Inspect for security of installation, cleanliness, and evidence of damage.	225		Inspection Operation 1	
345001	Instrument Panel Mounted Avionics Units (Including Audio Panel, VHF Nav/Com(s), ADF, GPS, Transponder, and Compass System) - Inspect for deterioration, cracks, and security of instrument panel mounts. Inspect for security of electrical connections, condition, and security of wire routing.	225		Inspection Operation 1	
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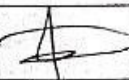
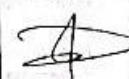
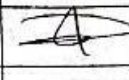
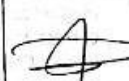
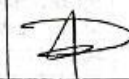
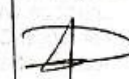
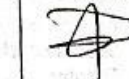
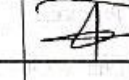
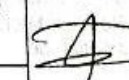
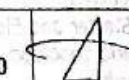
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 34 – NAVIGATION (Cont..)				
345002	Avionics Operating Controls - Inspect for security and proper operation of controls and switches and ensure that all digital segments will illuminate properly.	225		Inspection Operation 1
345003	Navigation Indicators, Controls, and Components - Inspect for condition and security.	220, 225		Inspection Operation 1
345004	Navigation Antennas and Cables - Inspect for security of attachment, connection, and condition.	310		Inspection Operation 1
ATA 37 – VACUUM				
371001	Vacuum System - Inspect for condition and security.	120		
371002	Vacuum Pumps - Check for condition and security. Check vacuum system breather line for obstructions, condition, and security.	120		
371003	Vacuum System Hoses - Inspect for hardness, deterioration, looseness, or collapsed hoses.	120		
371004	Gyro Filter - Inspect for damage, deterioration and contamination. Clean or replace if required.	120		
ATA 52 – DOORS				
521001	Doors - Inspect general condition. Check latches, hinges, and seals for condition, operation, and security of attachment.	210		Inspection Operation 1
531001	Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint, and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.	210		
531002	Firewall Structure - Inspect for wrinkles, damage, cracks, sheared rivets, etc. Check cowl shock mounts for condition and security.	120		
531003	Internal Fuselage Structure - Inspect bulkheads, doorposts, stringers, doublers, and skins for corrosion, cracks, buckles, and loose rivets, bolts and nuts.	211		Inspection Operation 1
ATA 55 – STABILIZERS				
551001	Horizontal Stabilizer and Tailcone structure - Inspect bulkheads, spars, ribs, and skins, for cracks, wrinkles, loose rivets, corrosion, or other damage. Inspect horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings, and tips.	320, 330		
551002	Horizontal Stabilizer and Tips - Inspect externally for skin damage and condition of paint.	320, 330		
553001	Vertical Stabilizer Fin - Inspect bulkheads, spars, ribs, and skins for cracks, wrinkles, loose rivets, corrosion, or other damage. Inspect vertical stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings, and tip.	340		
553002	Vertical Stabilizer Fin and Tailcone - Inspect externally for skin damage and condition of paint.	340		

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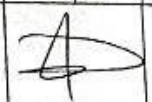
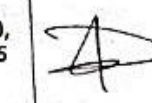
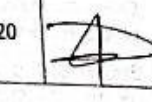
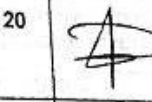
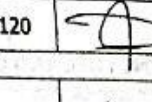
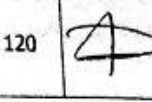
 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		AKADEMI PENERBANG INDONESIA BANYUWANGI ITEM CODE NUMBER ATA 71 - POWERPLANT 716001	
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS	
ATA 56 - WINDOWS					
561001	Windows and Windshield - Inspect general condition. Check latches, hinges, and seals for condition, operation, and security of attachment.	210			
ATA 57 - WINGS					
571001	Wing Surfaces and Tips - Inspect for skin damage, loose rivets, and condition of paint.	510, 520, 610, 620			
571002	Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets, and condition of paint.	510, 610			
571003	Wing Access Plates - Check for damage and security of installation.	510, 520, 610, 620		Inspection Operation 3	
571004	Wing Spar and Wing Strut Fittings - Check for evidence of wear. Check attach bolts for indications of looseness and retorquing as required.	510, 520, 610, 620		Inspection Operation 3	
571005	Wing Structure - Inspect spars, ribs, skins, and stringers for cracks, wrinkles, loose rivets, corrosion, or other damage.	510, 520, 610, 620		Inspection Operation 3	
ATA 61 - PROPELLERS					
611001	Spinner - Check general condition and attachment.	110			
611002	Spinner, spinner bulkhead, and engine crankshaft expansion plug - remove spinner, wash, and inspect for cracks and fractures. While spinner is removed, check expansion plug and area for evidence of leakage, security of attachment, and general condition.	110			
611003	Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion, or other damage.	110			
611004	Propeller Hub - Check general condition.	110			
611005	Propeller Mounting - Check for security of installation.	110			
611006	Propeller Mounting Bolts - Inspect mounting bolts and safety wire for signs of looseness. Retorque mounting bolts as required.	110			
ATA 71 - POWERPLANT					
711001	Cowling - Inspect for cracks, dents, other damage and security of fasteners.	120		New Revision Model 172 MM	
712001	Engine Shock Mounts, Engine Mount Structure, and Ground Straps - Check condition, security, and alignment.	120			
712002	Do a check of the engine mount and the oil filler tube for evidence of contact. Refer to SB99-71-02.	120		New Revision Model 172 MM	
716001	Alternate Induction Air System - Check for obstructions, operation, and security.	120			

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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 71 – POWERPLANT (Cont..)				
716002	Induction System - Check security of clamps, tubes, and ducting. Inspect for evidence of leakage.	120		
716003	Induction Airbox, Valves, Doors, and Controls - Remove air filter and inspect hinges, doors, seals, and attaching parts for wear and security. Check operation.	120		
716004	Induction Air Filter - Remove and clean. Inspect for damage and service.	120		
720000	Fuel line (Stainless Steel Tube Assembly) and support clamp inspection and installation. Refer to Lycoming Service Bulletin Number 342E or Later. NOTE : Completed every annual, overhaul, and any time fuel lines or clamps are serviced, removed, or replaced.	120		Every Annual Inspection or Overhaul
722001	Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.	120		
722002	Crankcase, Oil Sump, and Accessory Section - Inspect for cracks and evidence of oil leakage. Check bolts and nuts for looseness and retorquing as necessary. Check crankcase breather lines for obstructions, security, and general condition.	120		
722003	Hoses, Metal Lines, and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.	120		
723001	Engine Cylinders, Rocker Box Covers, and Pushrod Housings - Check for fin damage, cracks, oil leakage, security of attachment, and general condition.	120		Inspection Operation 4
723002	Engine Metal Lines, Hoses, Clamps, and Fittings - Check for leaks, condition, and security. Check for proper routing and support.	120		
723003	Engine Baffles and Seals - Check condition and security of attachment.	120		
723004	Cylinder Compression - Complete a differential compression test. If there is weak cylinder compression, refer to Chapter 71, Engine - Troubleshooting, for further procedures.	120		
Cylinder #1	Cylinder #2	Cylinder #3		Cylinder #4
75	70	70		75
ATA 73 – ENGINE FUEL AND CONTROL				
730001	Engine-Driven Fuel Pump - Check for evidence of leakage, security of attachment, and general condition.	120		

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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		AKADEMI PENERBANG INDONESIA BANYUWANGI	
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS	
ATA 73 – ENGINE FUEL AND CONTROL (Cont...)					
730002	Fuel Injection System - Check system for security and condition. Clean fuel Inlet screen, check and clean injection nozzles and screens (if evidence of contamination is found), and lubricate air throttle shaft.	120			
730003	Idle and Mixture - Run the airplane engine to determine satisfactory performance. If required, adjust the idle rpm and fuel mixture. Refer to Chapter 73, Fuel Injection Systems - Maintenance Practices.	120			
ATA 74 – IGNITION					
741001	Magnetos - Examine the external condition and for correct installation and condition of the electrical leads. Complete a check of the engine timing (external timing). Refer to Chapter 74, Ignition System - Maintenance Practices.	120			
742001	Ignition Harness and Insulators - Check for proper routing, deterioration, and condition of terminals.	120			
742002	Spark Plugs - Remove, clean, analyze, test, gap, and rotate top plugs to bottom and bottom plugs to top.	120			
743001	Ignition Switch and Electrical Harness - Inspect for damage, condition, and security.	120			
ATA 76 – ENGINE CONTROLS					
761001	Engine Controls and Linkage - Examine the general condition and freedom of movement through the full range. Complete a check for the proper travel, security of attachment, and for evidence of wear. Complete a check of the friction lock and vernier adjustment for proper operation. Complete a check to make sure the throttle, fuel mixture, and propeller governor arms operate through their full arc of travel.	120, 225		The maximum linear freeplay is 0.050 inch.	
ATA 78 – EXHAUST					
781001	Exhaust System - Inspect for cracks and security. Special check in area of heat exchanger. Refer to Chapter 78, Exhaust system - Maintenance Practices.	120			
ATA 79 – OIL					
791001	Engine Oil - Drain oil sump and oil cooler. Check for metal particles or foreign material in filter, on sump drain plug and on engine suction screen. Replace filter, and refill with recommended grade aviation oil	120		They are complete every 50 hours or 4 (four) months, whichever occurs first.	
792001	Oil Cooler - Check for obstructions, leaks, and security of attachment.	120			
ATA 80 - STARTING					
801001	Starter and Electrical Connections - Check security and condition of starter, electrical connection, and cable.	120			
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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
ATA 80 - STARTING (Cont...)				
801002	Bendix Drive Starter Assembly - Clean and lubricate starter drive assembly.	120		
FINAL STEP				
000000	Perform a test run-up. Record parameters (at engine shutdown).	000		
000000	After the test run-up, remove upper and lower engine cowlings and check for leaks (oil, fuel, air, exhaust gases). If everything is normal, reinstall the engine cowlings and check that they are correctly locked.	000		
000000	Record this inspection in the aircraft maintenance files (airframe, engine and propeller log books).	000		
<i>*End of 100 Hours Inspection Sheet*</i>				

Component Replacement Record				
No.	Description	S/N OFF	S/N ON	Sign

Inspection Result :

OK

Corrective Action :

N/A

Return to Service

I hereby certify that aircraft PK - has been maintained and inspected in accordance with the Cessna 172S Approved Maintenance Program and met requirements with applicable of Civil Aviation Safety Regulation and is determined to be airworthy condition.

Issued at : API 341 Date : 07/05/2021
 Amel No. : 10246 Signature : 

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AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-1006

WORK ORDER

ORDER NUMBER	:		A/C Type	:	C1725	A/C Serial	:	172511705	A/C Reg	:	PK-BYS
A/C Total flying hours	:	1079:15	Place	:	MP BWI	Date completed	:	9 Mei 2024			

Description of work:	ARC	Resolved	Additional Work Required
1.	100 Hours Inspection sheet Incoming Engine FO-360-C2A		
2.			
3.			
4.			
5.			

Mechanic	Engineer	Inspector
1. Eko P.	1. Erfan	1. Yogi A.
2. Fauzila	2. Yotua	2. Fauzan H.
3. Hendrik	3. Machan	
4. Ick-ban	4. Dimas	
5.	5. Aji	
6.		
7.		
8.		
9.		
10.		

Tool & Equipment

Description	Qty	Validity



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 1450

 **AKADEMI PENERBANG INDO
BANTUWANGI**

100 HOURS INSPECTION SHEET
LYCOMING ENGINE IO-360-L2A

Aircraft Registration
Aircraft Serial Number
Date
Res.

Part & material

[illegible]

Chief of Quality Control

Banyuwangi, / /

Chief of Engineering

(PAULUS SAMBADA)

(ANDHIKA BAGASPATI)

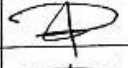
 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK
	APPENDIX

100 HOURS INSPECTION SHEET
LYCOMING ENGINE IO-360-L2A

Due at :
 Insp. Interval : Every 100 Hours
 Type Inspection : Engine Routine
 Form No. : 141-014-LYC100

Aircraft Registration : PK-BUS
 Aircraft Serial Number : 14211705
 Date : 7 Mei 2024
 Reference : Lycoming Operator Manual IO-360-L2A

Aircraft Hours : 1037 : 15
 Engine Hours : 1037 : 15
 Propeller Hours : 1037 : 15
 Manual Revision : 8th Edition
 December 2009

ITEM CODE NUMBER	TASK	ENGINEER SIGN	REMARKS
000000	Record anomalies into log book or equivalent document for corrective action.		
000000	Check aircraft compliance with airworthiness directives, service bulletins and service letters.		
000000	Check expiry date of life-limited parts : - Airframe - Equipment and hoses		

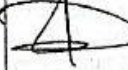
IGNITION SYSTEM

1	If fouling of spark plugs is apparent, rotate bottom plugs to upper position.		
2	Examine spark plug leads of cable and ceramics for corrosion deposits. This condition is evidence of either leaking spark plugs, improper cleaning of the spark plug walls or connector ends. Where this condition is found, clean the cable ends, spark plug walls and ceramics with a dry, clean cloth or a clean cloth moistened with methyl-ethyl-ketone. All parts should be clean and dry before assembly.		
3	Check ignition harness for security of mounting clamps and be sure connections are tight at spark plug and magneto terminals.		

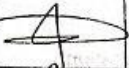
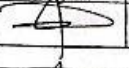
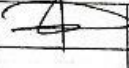
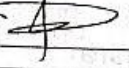
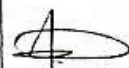
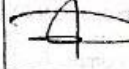
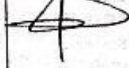
FUEL AND INDUCTION SYSTEM

1	Check the primer lines for leaks and security of the clamps. Remove and clean the fuel inlet strainers. Check the mixture control and throttle linkage for travel, freedom of movement, security of the clamps and lubricate if necessary. Check the air intake ducts for leaks, security filter damage; evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter. Check vent lines for evidence of fuel or oil seepage; if present, fuel pump may require replacement.		
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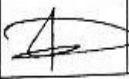
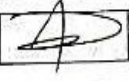
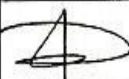
LUBRICATION SYSTEM

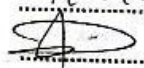
1	Replace external full flow oil filter element (Check used element for metal particles) drain and renew lubricating oil.		
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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX	
ITEM CODE NUMBER	TASK	ENGINEER SIGN	REMARKS
ELECTRICAL SYSTEM			
1	Check all wiring connected to the engine or accessories. Any shielded cables that are damaged should be replaced. Replace clamps or loose wires and check terminals for security and cleanliness.		
2	Remove spark plugs; test, clean and regap. Replace if necessary.		
LUBRICATION SYSTEM			
1	Drain and Renew Lubricating Oil.		
2	(Engines Not Equipped with External Filter). Remove oil pressure screen and clean thoroughly.		Note Carefully for presence of metal particles that are indicative of internal damage. Change oil every 25 hours.
3	Check oil lines for leaks, particularly at connections for security of anchorage and for wear due to rubbing or vibration, for dents and cracks.		
EXHAUST SYSTEM			
1	Check attaching flanges at exhaust ports on cylinder for evidence of leakage. If they are loose they must be removed and machined flat before they are reassembled and tightened. Examine exhaust manifolds for general condition.		
COOLING SYSTEM			
1	Check cowling and baffle for damage and secure anchorage. Any damaged or missing part of the cooling system must be repaired or replaced before the aircraft resumes operation.		
CYLINDERS			
1	Check rocker box cover for evidence of oil leaks. If found, replace gasket and tighten screws to specified torque (50 in. -lbs)		
2	Check cylinder for evidence of excessive heat which is indicated by burned paint on the cylinder. This condition is indicative of internal damage to the cylinder and, if found, its cause must be determined and corrected before the aircraft resumes operation.		
3	Heavy discoloration and appearance of seepage at cylinder head and barrel attachment area is usually due to emission of thread lubricant used during assembly of the barrel at the factory, or by slight gas leakage which stops after the cylinder has been in service for awhile. This condition is neither harmful nor detrimental to engine performance and operation. If it can be proven that leakage exceeds these conditions, the cylinder should be replaced.		

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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		
REMARKS				
ITEM CODE NUMBER		TASK	ENGINEER SIGN	
MAGNETOS				
1	Check breaker points for pitting and minimum gap. Check for excessive oil in the breaker compartment, if found, wipe dry with a clean lintless cloth. The felt located at the breaker points should be lubricated in accordance with the magneto manufacturer's instructions. Check magneto to engine timing. Timing procedure is described in Section 5, 1, b of the Lycoming Operator's Manual O-360 And Associated Models			
ENGINE ACCESSORIES				
1	Engine Mounted accessories such as pumps, temperature and pressure sensing units should be checked for secure mounting, tight connections.			
CYLINDERS				
1	Check cylinders visually for cracked or broken fins.			
ENGINE MOUNTS				
1	Check engine mounting bolts and bushings for security and excessive wear. Replace any bushings that are excessively worn.			
FUEL INJECTION NOZZLES AND FUEL LINES				
1	Check fuel injector nozzles for looseness, tighten to 60 in.-lbs torque. Check fuel line for dye stains at connection indicating leakage and security of line. Repair or replacement must be accomplished before the aircraft resumes operation.			
FINAL STEPS				
000000	Perform a test run-up. Record parameters (at engine shutdown).			
000000	After the test run-up, remove upper and lower engine cowlings and check for leaks (oil, fuel, air, exhaust gases). If everything is normal, reinstall the engine cowlings and check that they are correctly locked.			
000000	Record this inspection in the aircraft maintenance files (airframe, engine and propeller log books).			
Component Replacement Record				
No.	Description	S/N OFF	S/N ON	Sign
Inspection Result :				
Issued Date : September 2021		Reissue No. : 01	Revision No. : Rev. 02	Page : APX-68

 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
OK	
Corrective Action : N/A	
Return to Service I hereby certify that aircraft PK - has been maintained and inspected in accordance with the Cessna 172S Approved Maintenance Program and met requirements with applicable of Civil Aviation Safety Regulation and is determined to be airworthy condition. Issued at : <u>API BWI</u> Date : <u>07/09/2021</u> Amel No. : <u>60296</u> Signature : 	

Issued Date :	Reissue No. :	Revision No. :	Page :
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AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 145D-1006

WORK ORDER

ORDER NUMBER	:		A/C Type	:	C172S	A/C Serial	:	17281705	A/C Reg	:	PR-BYS
A/C Total flying hours	:	1097.15	Place	:	APB/BW	Date completed	:	7 mei 2024			

Description of work :	ARC	Resolved	Additional Work Required
1. fuel lines and support camp installation and inspection			
2.			
3.			
4.			
5.			

Mechanic	Engineer	Inspector
1. Eko P.	1. Erfan	1. Yogi A.
2. Fauzila	2. Maedha	2. Fajar H.
3. Ickbal	3. Dimas	
4. Henrick	4. Yona	
5.	5. Agis	
6.		
7.		
8.		
9.		
10.		

Tool & Equipment

Description	Qty	Validity



AKADEMI PENERBANG INDONESIA BANYUWANGI
AIRCRAFT MAINTENANCE ORGANIZATION 1450

AKADEMI PENERBANG INDONESIA
BANYUWANGI
FUEL LINES AND SUPPLY
INSTALLATION

Part & material

Description	Qty	Validity

Chief of Quality Control

Banyuwangi, / /

Chief of Engineering

(PAULUS SAMBADA)

(ANDHIKA BAGASPATI)

**AKADEMI PENERBANG INDONESIA
BANYUWANGI**

**MAINTENANCE PROGRAM
CESSNA 172 SKYHAWK**

APPENDIX

**FUEL LINES AND SUPPORT CLAMP
INSTALLATION AND INSPECTION**

Repetitive Airworthiness Directive
Type Inspection : Mandatory
Form No. : 141-014-RAD_01

Aircraft Registration : PK-BLS Aircraft Hours : 1092:15
Aircraft Serial Number : 172811705 Engine Hours : 1082:15
Date : 2 mei 2021 Propeller Hours : 1082:15

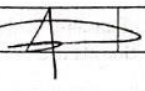
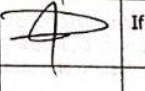
Interval : Examine fuel lines every 100 hours, annual inspection, overhaul and any time fuel lines or clamps are serviced, removed, or replaced.

Reference : FAA AD No. 2015-19-07
EASA AD No. US-2015-19-07

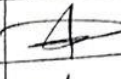
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
FUEL LINE INSPECTION AND CORRECTIVE ACTION				
1	Identify the fuel line by number. Four-cylinder engines usually have four fuel lines (Model IO-360-L2A)	000		
2	Examine each fuel line and record findings per Fuel Line Inspection and Installation Checklist below.	000		
Fuel Line Inspection and Installation Checklist (Model IO-360-L2A)				
	Inspection Item	Fuel Line No.	Findings	Corrective Action Taken
Examine fuel line for damage, leaks, dents, pits, nicks, kinks, stains caused by fuel leaks, cracks, brittleness or chaffing		1		
		2		
		3		
		4		
Clamps (with cushions) attached to fuel lines. Fuel lines must be held in place securely with clamps in position approximately 8 in. (20 cm) apart. If no clamps are attached the fuel line that was in service, the fuel line must be replaced.		1		
		2		
		3		
		4		
Examine the cushion on clamps for deterioration. If cushions are deteriorated or missing, replace the clamp. Make sure the clamp are tightly secured and attached. If the clamps are loose, the fuel line must be replaced.		1		
		2		
		3		

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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
Fuel Line Inspection and Installation Checklist (Model IO-360-L2A) Cont...				
	Inspection Item	Fuel Line No.	Findings	Corrective Action Taken
	NOTE : plastic tie straps are not acceptable substitutes for clamps.	4		
3	After the inspection, refer to Table below for corrective action	000		
Table Corrective Action for Fuel Lines				
	Condition	Corrective Action		
	Leaky, cracked, brittle, worn, chafed, fuel line Bent (non-kinked) stainless steel fuel lines that have an inside radius less than 5/8 in. (15.88 mm)	Replace fuel line with a new fuel line. ✖ Do NOT repair any fuel line that leaks or is cracked.		
	Damaged, pitted, nicked, dented, crimped or kinked fuel line	Replace fuel line with a new fuel line. ✖ Do NOT re-use any fuel line that has a dent. Dents can cause cracks to form.		
	No clamps installed on fuel line that had been in service	Replace the fuel line with a new fuel line and install clamps – refer to the section "Fuel Line Installation" in this Service Bulletin.		
	Loose clamps	Replace fuel line with a new fuel line. ✖ Tighten or replace clamps and make sure they securely attach the fuel line to the engine.		
	Deteriorated cushion on clamp, missing cushion, or cushion does not completely cover the fuel line diameter. (On engines that used metal clamps with no cushion, use the P/N LW-12598 fuel line sleeve at each of those clamping locations. The fuel line sleeve is not used with the cushioned clamps.)	Examine fuel lines in areas adjacent to the clamp. Replace any fuel line that has any condition identified above. Replace the clamp with a new clamp		
	Trouble with fuel injector clamp installation caused by obstructive baffling	Install the clamps to enable clearance.		
✖ Refer to the latest revision of Service Instruction No. 1301 for superseded fuel line identification, bending requirements and replacement information.				
4	Record Compliance with this Service Bulletin and any corrective action in the engine logbook.	000		
Fuel Lines Installation (if applicable)				
1	Examine each fuel line for unacceptable conditions as per the "Fuel Line Inspection and Corrective Action" section in this Service Bulletin.	000		If Applicable for Installation
2	The diagrams in this Service Bulletin show a suggested routing and configuration arrangement for fuel lines on Lycoming engine models. These fuel line configuration diagrams are conceptual and are approximated. Fuel system routing could have slightly different configurations.	000		If Applicable for Installation
3	Clamps (preferably with cushions) must be installed on all fuel lines. If a fuel line had been in service and clamps were not installed, these fuel lines must be replaced with new fuel lines. a. Do NOT use plastic tie straps in place of cushioned clamps.	000		If Applicable for Installation

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 AKADEMI PENERBANG INDONESIA BANYUWANGI		MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX		
ITEM CODE NUMBER	TASK	ZONE	ENGINEER SIGN	REMARKS
3	b. On engines that used metal clamps with no cushion, use the P/N LW-12598 fuel line sleeve at each of those clamping locations. The fuel line sleeve is not used with the cushioned clamps. c. If the clamps are to have a cushion, make sure the cushion is not missing and is intact, and completely covers the fuel line diameter. d. Make sure the clamps are tightly attached to support the fuel line and to prevent movement from vibration or motion frequencies.	000		If Applicable for Installation
4	Make sure that the fuel lines are securely connected (to prevent line movement during flight) with the necessary clamps and hardware.	000		If Applicable for Installation
5	Fuel lines must be held in place securely using clamps with cushions. The clamps must be approximately 8 in. (20 cm) apart.	000		If Applicable for Installation
WARNING : DO NOT ROUTE FUEL LINES CLOSE TO HEAT SOURCES. HEAT CAN DAMAGE THE FUEL LINE AND CAUSE A FUEL LEAK WHICH COULD LEAD TO CATASTROPHIC ENGINE FAILURE.				
6	Do not let fuel lines touch the engine or airframe baffle hardware. There must be a minimum clearance of 3/16 in. (4.76 mm) between a fuel line and any engine or airframe surface.	000		If Applicable for Installation
WARNING : DO NOT RETURN THE ENGINE TO SERVICE UNLESS THE ENGINE IS OPERATING CORRECTLY AND DOES NOT HAVE ANY LEAKS.				
7	Look for any fuel leaks. Identify and correct the cause of any fuel leak.	000		If Applicable for Installation
8	Record compliance with this Service Bulletin and any corrective action in the engine logbook.	000		If Applicable for Installation
<i>*End of Repetitive Airworthiness Directive Fuel Lines and Support Clamp Installation and Inspection*</i>				
Component Replacement Record				
No.	Description	S/N OFF	S/N ON	Sign
Inspection Result : ok				
Corrective Action : N/A				
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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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Return to Service	
I hereby certify that aircraft PK - has been maintained and inspected in accordance with the Cessna 172S Approved Maintenance Program and met requirements with applicable of Civil Aviation Safety Regulation and is determined to be airworthy condition.	
Issued at : <u>API B21</u>	Date : <u>07/05/2021</u>
Amel No. : <u>10246</u>	Signature : 

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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK
	APPENDIX

Attachment 1.

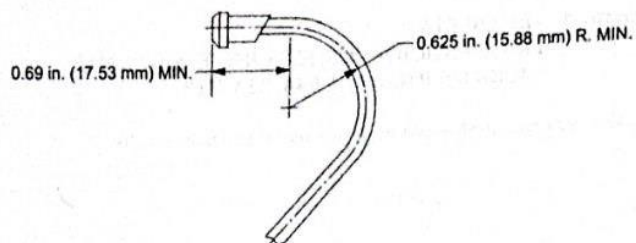


Figure 1. Fuel Line Showing Minimum Dimension for Bending

PLEASE Note ... When installing clamps, it does not matter whether the clamp is installed to the right or left of the shroud tube, only that it is clamped at that location and there is 3/16 inch (4.76 mm) clearance between the line and any engine surface.

CLAMP P/N DESIGNATION	
SCREW SIZE	CLAMP DIAMETER
LW-16266-10-13	
10 = #10 SCREW	-13 (.125)
	-25 (.250)
	-38 (.375)
	-44 (.438)
	-75 (.750)
25 = 1/4" SCREW	-13 (.125)
	-25 (.250)
	-38 (.375)
	-44 (.438)
	-50 (.500)
	-63 (.625)
	-75 (.750)

ISSUED			REVISED			PAGE NO.	REVISION	
MO	DAY	YEAR	MO	DAY	YEAR			
03	24	72	07	16	13	8 of 47	G	S.B. 342

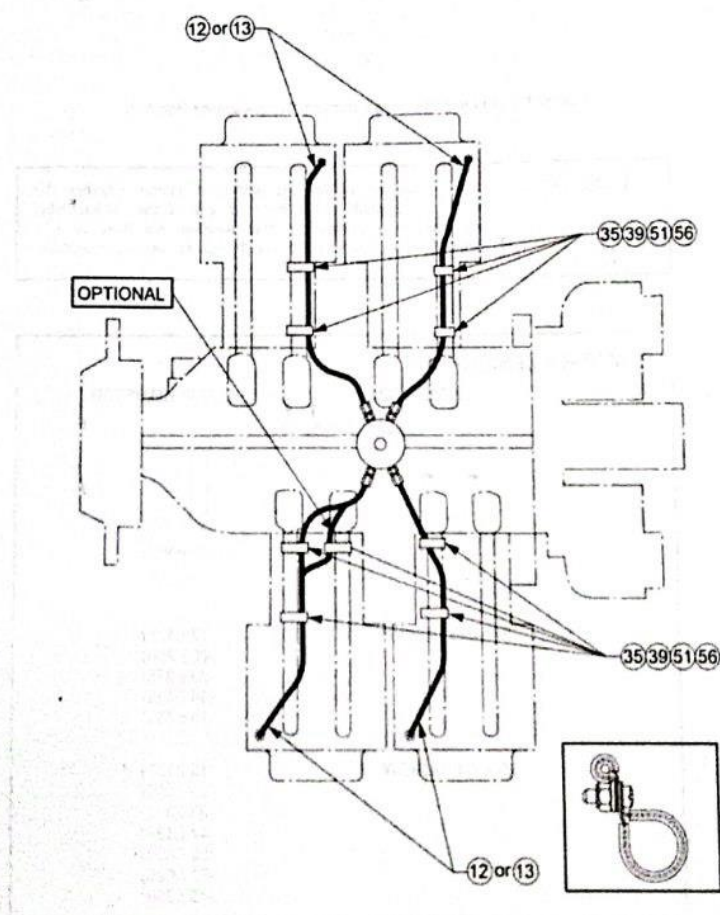
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 AKADEMI PENERBANG INDONESIA BANYUWANGI	MAINTENANCE PROGRAM CESSNA 172 SKYHAWK APPENDIX
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Attachment 2.

Diagram No. 1 --IO-320-B1A**IO-360-B1B, B1F, B2F, B2F6, B4A, F1A, L2A, M1A****AEIO-360-B1G6, B1H, B4A, H1A, H1B**

NOTE: Underlined engine models indicate new engine model added to the list



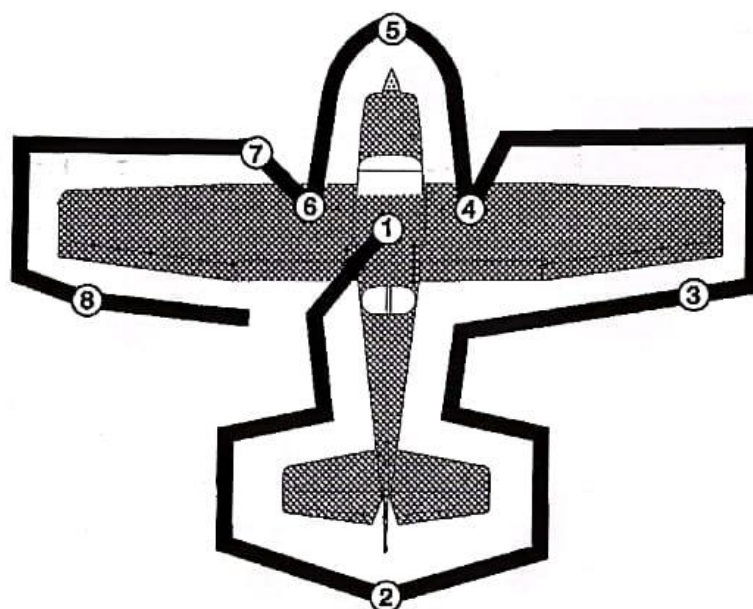
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Lampiran 3 Procedures Preflight Inspection

SECTION 4
NORMAL PROCEDURESCESSNA
MODEL 172S NAV III
GFC 700 AFCS**NORMAL PROCEDURES
PREFLIGHT INSPECTION**

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NOTE

Visually check airplane for general condition during walk-around inspection. Airplane should be parked in a normal ground attitude, refer to Figure 1-1, to make sure that fuel drain valves allow for accurate sampling. Use of the refueling steps and assist handles will simplify access to the upper wing surfaces for visual checks and refueling operations. In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces. Also, make sure that control surfaces contain no internal accumulations of ice or debris. Prior to flight, check that pitot heater is warm to touch within 30 seconds with battery and pitot heat switches on. If a night flight is planned, check operation of all lights, verify all LED landing/taxi light bulbs are operational (if installed) and make sure a flashlight is available.

Figure 4-1

CESSNA
MODEL 172S NAV III
GFC 700 AFCS

SECTION 4
NORMAL PROCEDURES

PREFLIGHT INSPECTION (Continued)

① CABIN

1. Pitot Tube Cover - REMOVE (check for pitot blockage)
2. Pilot's Operating Handbook - ACCESSIBLE TO PILOT
3. Garmin G1000 Cockpit Reference Guide - ACCESSIBLE TO PILOT
4. Airplane Weight and Balance - CHECKED
5. Parking Brake - SET
6. Control Wheel Lock - REMOVE

WARNING

WHEN THE MASTER SWITCH IS ON, USING AN EXTERNAL POWER SOURCE, OR MANUALLY ROTATING THE PROPELLER, TREAT THE PROPELLER AS IF THE MAGNETOS SWITCH WERE ON. DO NOT STAND, NOR ALLOW ANYONE ELSE TO STAND, WITHIN THE ARC OF THE PROPELLER SINCE A LOOSE OR BROKEN WIRE, OR A COMPONENT MALFUNCTION, COULD CAUSE THE ENGINE TO START.

7. MAGNETOS Switch - OFF
8. AVIONICS Switch (BUS 1 and BUS 2) - OFF
9. MASTER Switch (ALT and BAT) - ON
10. Primary Flight Display (PFD) - CHECK (verify PFD is ON)
11. FUEL QTY (L and R) - CHECK
12. LOW FUEL L and LOW FUEL R Annunciators - CHECK (verify annunciators are not shown on PFD)
13. OIL PRESSURE Annunciator - CHECK (verify annunciator is shown)
14. LOW VACUUM Annunciator - CHECK (verify annunciator is shown) (if installed)
15. AVIONICS Switch (BUS 1) - ON
16. Forward Avionics Fan - CHECK (verify fan is heard)

(Continued Next Page)

SECTION 4
NORMAL PROCEDURES

CESSNA
MODEL 172S NAV III
GFC 700 AFCS

PREFLIGHT INSPECTION (Continued)

① **CABIN** (Continued)

17. AVIONICS Switch (BUS 1) - OFF
18. AVIONICS Switch (BUS 2) - ON
19. Aft Avionics Fan - CHECK (verify fan is heard)
20. AVIONICS Switch (BUS 2) - OFF
21. PITOT HEAT Switch - ON (carefully check that pitot tube is warm to the touch within 30 seconds)
22. PITOT HEAT Switch - OFF
23. LOW VOLTS Annunciator - CHECK (verify annunciator is shown)
24. MASTER Switch (ALT and BAT) - OFF
25. Elevator Trim Control - TAKEOFF position
26. FUEL SELECTOR Valve - BOTH
27. ALT STATIC AIR Valve - OFF (push full in)
28. Fire Extinguisher - CHECK (verify gage pointer in green arc)

② **EMPENNAGE**

1. Baggage Compartment Door - CHECK (lock with key)
2. Rudder Gust Lock - REMOVE (if installed)
3. Tail Tiedown - DISCONNECT
4. Control Surfaces - CHECK (freedom of movement and security)
5. Elevator Trim Tab - CHECK (security)
6. Antennas - CHECK (security of attachment and general condition)

③ **RIGHT WING Trailing Edge**

1. Flap - CHECK (security and condition)
2. Aileron - CHECK (freedom of movement and security)

(Continued Next Page)

CESSNA
MODEL 172S NAV III
GFC 700 AFCS

SECTION 4
NORMAL PROCEDURES

PREFLIGHT INSPECTION (Continued)

④ RIGHT WING

1. Landing/Taxi Light(s) - CHECK (condition and cleanliness of cover) (If installed)
2. Wing Tiedown - DISCONNECT
3. Main Wheel Tire - CHECK (proper inflation and general condition (weather checks, tread depth and wear, etc.))
4. Fuel Tank Sump Quick Drain Valves - DRAIN

Drain at least a cupful of fuel (using sampler cup) from each sump location to check for water, sediment, and proper fuel grade before each flight and after each refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move any additional contaminants to the sampling points. Take repeated samples from **all** fuel drain points until **all** contamination has been removed. If contaminants are still present, refer to WARNING below and do not fly airplane.

NOTE

Collect all sampled fuel in a safe container. Dispose of the sampled fuel so that it does not cause a nuisance, hazard or damage to the environment.

WARNING

IF, AFTER REPEATED SAMPLING, EVIDENCE OF CONTAMINATION STILL EXISTS, THE AIRPLANE SHOULD NOT BE FLOWN. TANKS SHOULD BE DRAINED AND SYSTEM PURGED BY QUALIFIED MAINTENANCE PERSONNEL. ALL EVIDENCE OF CONTAMINATION MUST BE REMOVED BEFORE FURTHER FLIGHT.

5. Fuel Quantity - CHECK VISUALLY (for desired level)
6. Fuel Filler Cap - SECURE and VENT CLEAR

(Continued Next Page)

SECTION 4
NORMAL PROCEDURES

CESSNA
MODEL 172S NAV III
GFC 700 AFCS

PREFLIGHT INSPECTION (Continued)

⑤ NOSE

1. Fuel Strainer Quick Drain Valve (located on bottom of fuselage) - DRAIN

Drain at least a cupful of fuel (using sampler cup) from valve to check for water, sediment, and proper fuel grade before each flight and after each refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move any additional contaminants to the sampling points. Take repeated samples from **all** fuel drain points, including the fuel reservoir and fuel selector, until **all** contamination has been removed. If contaminants are still present, refer to WARNING below and do not fly the airplane.

NOTE

Collect all sampled fuel in a safe container. Dispose of the sampled fuel so that it does not cause a nuisance, hazard, or damage to the environment.

WARNING

IF, AFTER REPEATED SAMPLING, EVIDENCE OF CONTAMINATION STILL EXISTS, THE AIRPLANE SHOULD NOT BE FLOWN. TANKS SHOULD BE DRAINED AND SYSTEM PURGED BY QUALIFIED MAINTENANCE PERSONNEL. ALL EVIDENCE OF CONTAMINATION MUST BE REMOVED BEFORE FURTHER FLIGHT.

2. Engine Oil Dipstick/Filler Cap:
 - a. Oil level - CHECK
 - b. Dipstick/filler cap - SECURE

NOTE

Do not operate with less than 5 quarts. Fill to 8 quarts for extended flight.

3. Engine Cooling Air Inlets - CHECK (clear of obstructions)
4. Propeller and Spinner - CHECK (for nicks and security)
5. Air Filter - CHECK (for restrictions by dust or other foreign matter)

(Continued Next Page)

CESSNA
MODEL 172S NAV III
GFC 700 AFCS

SECTION 4
NORMAL PROCEDURES

PREFLIGHT INSPECTION (Continued)

⑤ NOSE (Continued)

6. Nosewheel Strut and Tire - CHECK (proper inflation of strut and general condition of tire (weather checks, tread depth and wear, etc.))
7. Static Source Opening (left side of fuselage) - CHECK (verify opening is clear)

⑥ LEFT WING

1. Fuel Quantity - CHECK VISUALLY (for desired level)
2. Fuel Filler Cap - SECURE and VENT CLEAR
3. Fuel Tank Sump Quick Drain Valves - DRAIN

Drain at least a cupful of fuel (using sampler cup) from each sump location to check for water, sediment, and proper fuel grade before each flight and after each refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move any additional contaminants to the sampling points. Take repeated samples from all fuel drain points until all contamination has been removed. If contaminants are still present, refer to WARNING below and do not fly airplane.

NOTE

Collect all sampled fuel in a safe container. Dispose of the sampled fuel so that it does not cause a nuisance, hazard, or damage to the environment.

WARNING

IF, AFTER REPEATED SAMPLING, EVIDENCE OF CONTAMINATION STILL EXISTS, THE AIRPLANE SHOULD NOT BE FLOWN. TANKS SHOULD BE DRAINED AND SYSTEM PURGED BY QUALIFIED MAINTENANCE PERSONNEL. ALL EVIDENCE OF CONTAMINATION MUST BE REMOVED BEFORE FURTHER FLIGHT.

4. Main Wheel Tire - CHECK (proper inflation and general condition (weather checks, tread depth and wear, etc.))

(Continued Next Page)

**SECTION 4
NORMAL PROCEDURES**

**CESSNA
MODEL 172S NAV III
GFC 700 AFCS**

PREFLIGHT INSPECTION (Continued)

⑦ LEFT WING Leading Edge

1. Fuel Tank Vent Opening - CHECK (blockage)
2. Stall Warning Opening - CHECK (blockage)

NOTE

To check the system, place a clean handkerchief over the vent opening and apply suction; a sound from the warning horn will confirm system operation.

3. Wing Tiedown - DISCONNECT
4. Landing/Taxi Light(s) - CHECK (condition and cleanliness of cover)

⑧ LEFT WING Trailing Edge

1. Aileron - CHECK (freedom of movement and security)
2. Flap - CHECK (security and condition)

Lampiran 4 Remove and install probe CHT

CESSNA® MODEL 172 (SERIES 1996 AND ON) MAINTENANCE MANUAL

ENGINE TEMPERATURE INDICATING SYSTEM - MAINTENANCE PRACTICES

1. Description and Operation

- A. Maintenance of the engine temperature system includes the removal and installation of the different components.

2. EGT Indicator Removal/Installation

NOTE: The procedures that follow are for airplanes without Garmin G1000.

- A. Remove the EGT Indicator (Refer to Figure 201).
- (1) Get access to the forward side of the indicator.
 - (2) Disconnect the electrical connector from the indicator.
 - (3) Remove the screws that attach the indicator to the instrument panel and remove the indicator from the airplane.
- B. Install the EGT Indicator (Refer to Figure 201).
- (1) Put the indicator in the instrument panel and attach with the screws.
 - (2) Connect the electrical connector to the indicator.

3. EGT Probe Removal/Installation

NOTE: The procedures that follow are for airplanes without Garmin G1000.

- A. Remove the EGT Probe (Refer to Figure 201).
- (1) Remove the engine cowl. Refer to Chapter 71, Engine Cowling - Maintenance Practices.

CAUTION: Make sure that the exhaust system and engine are cool before you remove the probes.

- (2) Cut the tie strap that attaches the electrical connectors (JN006) and wire.
 - (3) Disconnect the probe at the electrical connector.
 - (4) Remove the probe from the muffler tailpipe.
- B. Install the EGT Probe (Refer to Figure 201).
- (1) Install the probe to the muffler tailpipe.
 - (2) Tighten the screw for the clamp.
 - (3) Attach safety wire to the EGT probe clamp and screw. Refer to Chapter 20, Safelying - Maintenance Practices.
 - (4) Connect the probe at the electrical connector (JN006).
 - (5) Attach the electrical connector and wire with the tie straps.
 - (6) Install the engine cowl. Refer to Chapter 71, Engine Cowling - Maintenance Practices.

4. EGT Probe Removal/Installation (Airplanes with Garmin G1000)

- A. Remove the EGT Probe (Refer to Figure 202).

NOTE: The EGT probe is welded to the clamp.

NOTE: Airplanes with Garmin G1000 have an EGT probe at each cylinder. Removal and installation of the EGT probes are typical.

- (1) Remove the engine cowl. Refer to Chapter 71, Engine Cowling - Maintenance Practices.

CAUTION: Make sure the exhaust system and engine are cool before the probes are removed.

- (2) Disconnect the electrical connectors.
- (3) Cut and remove the safety wire from the EGT probe clamp and screw.

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MODEL 172 (SERIES 1996 AND ON)
 MAINTENANCE MANUAL

- (4) Loosen the clamp screw.
 - (5) Remove the clamp with the attached probe from the exhaust pipe.
 - B. Install the EGT Probe (Refer to Figure 202).
 - (1) Attach the clamp with the EGT probe to the exhaust pipe.
 - (2) Tighten the screw on the clamp.
 - (3) Attach safety wire to the EGT probe clamp and screw.
 - (4) Connect the electrical connectors.
 - (5) Attach the connectors together with a tie strap.
 - (6) Install the engine cowl. Refer to Chapter 71, Engine Cowling - Maintenance Practices.
 - (7) Make sure the EGT probe operates correctly. Refer to the Pilot's Operating Handbook.
- 5. EGT Probe Lead Wire Repair**
- A. EGT Probe Lead Wire Repair.
 - (1) Remove the screws to separate the EGT terminal connector housing.
 - (2) Cut the broken wire to a good termination.
 - (3) Make both wires the same length.
 - (4) Remove the insulation to get 1/4 inch of good wire strands.
 - (5) Replace the terminal connector housing if it is damaged.
 - (6) Wrap the wire around the terminal screws and tighten the screws.
 - (a) Make sure to keep the original polarity (red wire to the alumel (negative) terminal, yellow wire to the chromel (positive) terminal).
 - (7) Make sure the strain relief bracket is installed.

CAUTION: Damage to the lead wire can occur because of engine movement during startup and shutdown if there is not sufficient length in the lead wire.

 - (8) Make sure the lead wire has sufficient length.
 - (9) Do an operational check of the EGT indication on the ground.
- 6. CHT Probe Removal/Installation**
- A. Remove the CHT Probe (Refer to Figure 202).

NOTE: The CHT probes use a bayonet-style connector.

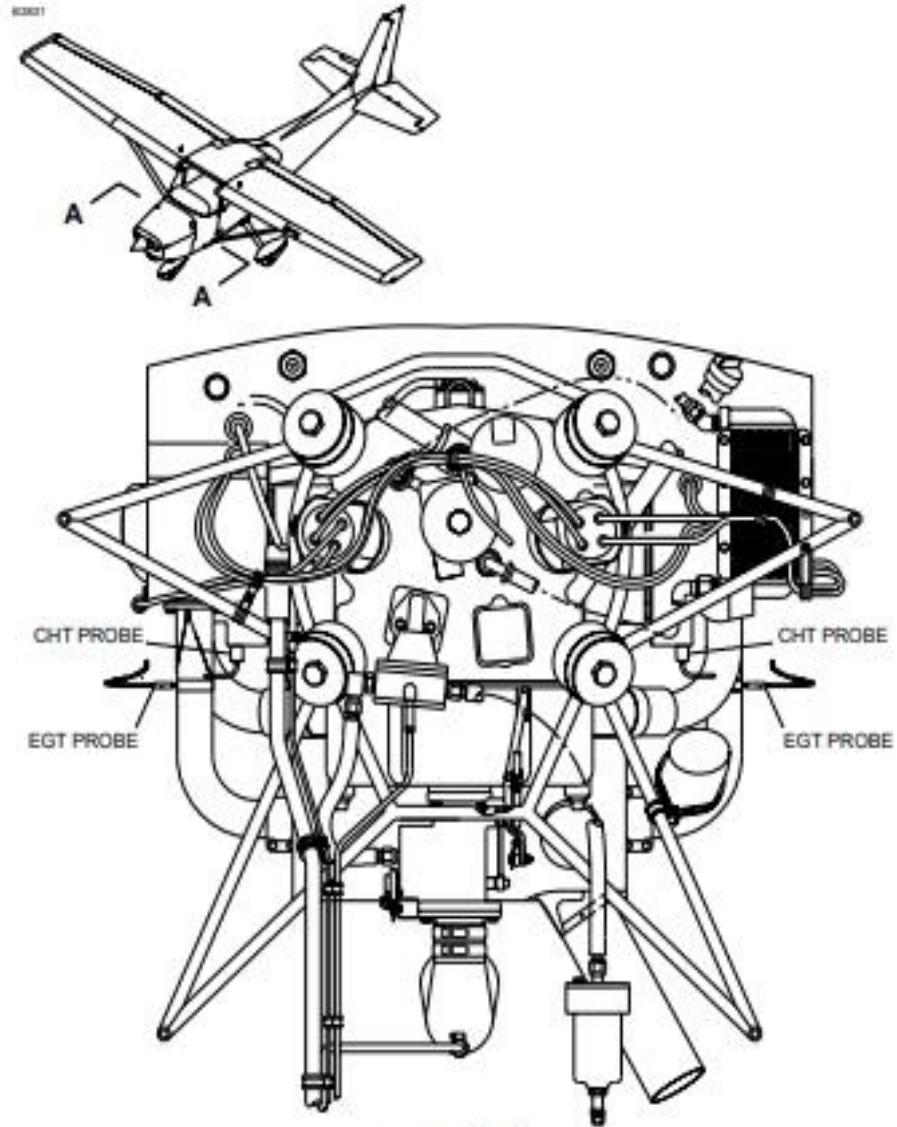
NOTE: Airplanes with Garmin G1000 have a CHT probe for each cylinder. Removal and installation of the CHT probes is typical.

 - (1) Remove the engine cowl. Refer to Chapter 71, Engine Cowling - Maintenance Practices.

CAUTION: Make sure the exhaust system and engine are cool before the probes are removed.

 - (2) Remove the terminal nut.
 - (3) Disconnect the terminal from the CHT probe.
 - (4) Turn the CHT probe to remove from the cylinder head.
 - B. Install the CHT Probe (Refer to Figure 202).
 - (1) Install the CHT probe into the cylinder head.
 - (2) Connect the terminal on the CHT probe.
 - (3) Install the terminal nut.
 - (4) Install the engine cowl. Refer to Chapter 71, Engine Cowling - Maintenance Practices.
 - (5) Make sure the CHT operates correctly. Refer to the Pilot's Operating Handbook.

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 MAINTENANCE MANUAL



VIEW A-A
 AIRPLANES WITH GARMIN G1000

EGT/CHT Probe Location
 Figure 202 (Sheet 1)

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Lampiran 5 Troubleshooting Flap Stuck

CESSNA® MODEL 172 (SERIES 1996 AND ON) MAINTENANCE MANUAL

FLAP CONTROL SYSTEM - TROUBLESHOOTING

1. Troubleshooting

NOTE: Due to remedy procedures in the following chart, it may be necessary to re-rig the system after trouble has been corrected.

TROUBLE	PROBABLE CAUSE	REMEDY
BOTH FLAPS FAIL TO MOVE	Open circuit breaker.	Reset and check continuity. Replace breaker if defective.
	Defective switch.	Place jumper across switch. Replace if defective.
	Defective motor.	Remove and bench test motor. Replace if defective.
	Broken or disconnected wires.	Run a continuity check of wiring. Connect or repair wiring.
	Defective or disconnected transmission.	Connect transmission. Remove, bench test and replace transmission if defective.
	Defective limit switch.	Check continuity of switches. Replace switches found defective.
BINDING IN SYSTEM AS FLAPS ARE RAISED AND LOWERED.	Cables not riding on pulleys.	Check visually. Route cables correctly over pulleys.
	Bind in drive pulleys.	Check drive pulleys in motion. Replace drive pulleys found defective.
	Broken or binding pulleys.	Check pulleys for free rotation or breaks. Replace defective pulleys.
	Frayed cable.	Check visually. Replace defective cable.
	Flaps binding on tracks.	Observe flap tracks and rollers. Replace defective parts.
LEFT FLAP FAILS TO MOVE	Disconnected or broken cable.	Check cable tension. Connect or replace cable.
	Disconnected push-pull rod.	Check visually. Attach push-pull rod.
INCORRECT FLAP TRAVEL	Incorrect rigging.	Rig correctly. Refer to Flap Control System Adjustment/Test .
	Defective operating switch.	Check continuity of switches. Replace switches found defective.

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TROUBLE	PROBABLE CAUSE	REMEDY
FLAPS FAIL TO RETRACT	Defective or disconnected flaps UP operating switch.	Check continuity of switch. Connect or replace switch.
FLAPS FAIL TO EXTEND	Defective or disconnected flaps DOWN operating switch.	Check continuity of switch. Connect or replace switch.

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 MAINTENANCE MANUAL

FLAP CONTROL SYSTEM - MAINTENANCE PRACTICES

1. General

- A. The wing flap control system has an electric motor and transmission assembly, drive pulleys, push-pull rods, cables, and a follow-up control. Power from the motor and the transmission assembly goes to the flaps by a system of drive pulleys, cables, and push-pull rods. Electrical power to the motor is controlled by two microswitches mounted on a floating arm assembly, a cam lever, and a follow-up control. As the flap control lever moves to the necessary flap setting, the attached cam activates one of the microswitches, and that activates the flap motor. As the flaps move to the necessary position, the floating arm is turned by the follow-up control until the active microswitch clears the cam. The circuit breaks and the motor stops. To move the flap in the opposite direction, the control lever is moved in the opposite direction. This causes the cam to activate the second microswitch, which changes the direction of the flap motor. The follow-up control moves the cam until it is clear of the second switch, which stops the flap motor. Limit switches at the flap actuator assembly control flap travel as the flaps get to the full UP or DOWN position.
- B. For a schematic of the flap system, refer to Figure 201.

2. Flap Motor and Transmission Assembly Removal/Installation

- A. Flap Motor and Transmission Assembly Removal (Refer to Figure 202).
- (1) Lower the flaps.
 - (2) Disconnect the electrical power.
 - (3) Remove the access plate 610GB. Refer to Chapter 6-20-02, Access/Inspection Plates - Description and Operation.
 - (4) Remove the bolt that attaches the actuating tube to the drive pulley.
 - (5) Turn the actuating tube in toward the transmission as far as possible by hand.
 - (6) Remove the bolt that attaches the flap motor hinge to the wing.
 - (7) Keep the brass washer that is installed between the hinge and the wing structure.
 - (8) Disconnect the electrical connectors from the motor and the limit switches.
 - (9) Carefully move the assembly from the wing through the access opening.
- B. Flap Motor and Transmission Assembly Installation (Refer to Figure 202).
- (1) Carefully move the assembly into the wing through the access opening.

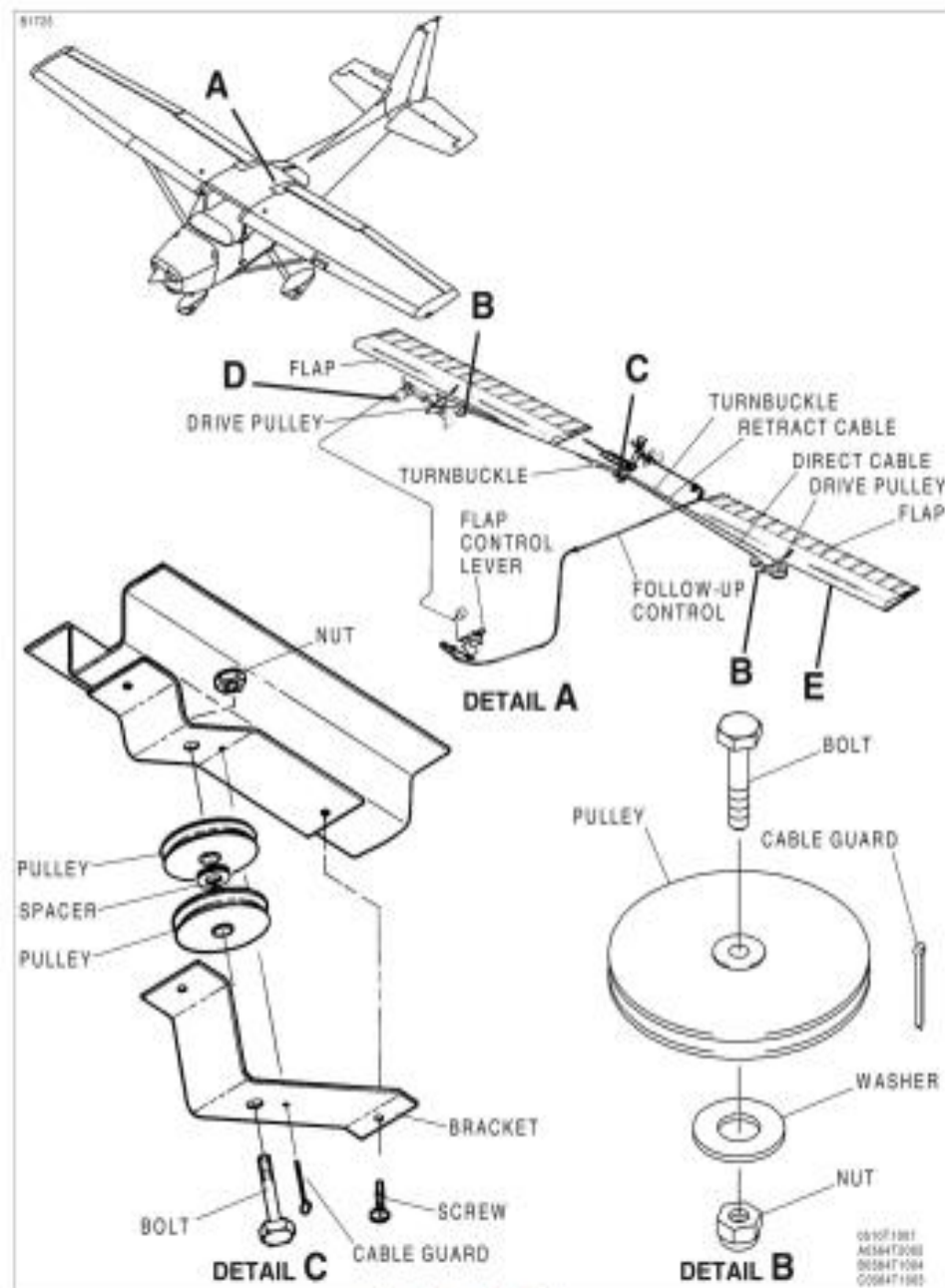
NOTE: If the hinge assembly was removed from the transmission, make sure that the short end of the hinge is installed toward the top.

- (2) Connect the electrical connectors to the motor and the limit switches.
- (3) Attach the flap motor hinge to the wing with the bolt and the brass washer.
- (4) Turn the actuating tube out toward the bell crank.
- (5) Install the bolt that attaches the actuating tube to the drive pulley.
- (6) Install the access plate 610GB. Refer to Chapter 6-20-02, Access/Inspection Plates - Description and Operation.
- (7) Connect the electrical power.
- (8) Do an operational check of the flaps. Refer to Flap System Adjustment/Test for the rigging instructions.

3. Flap Removal/Installation

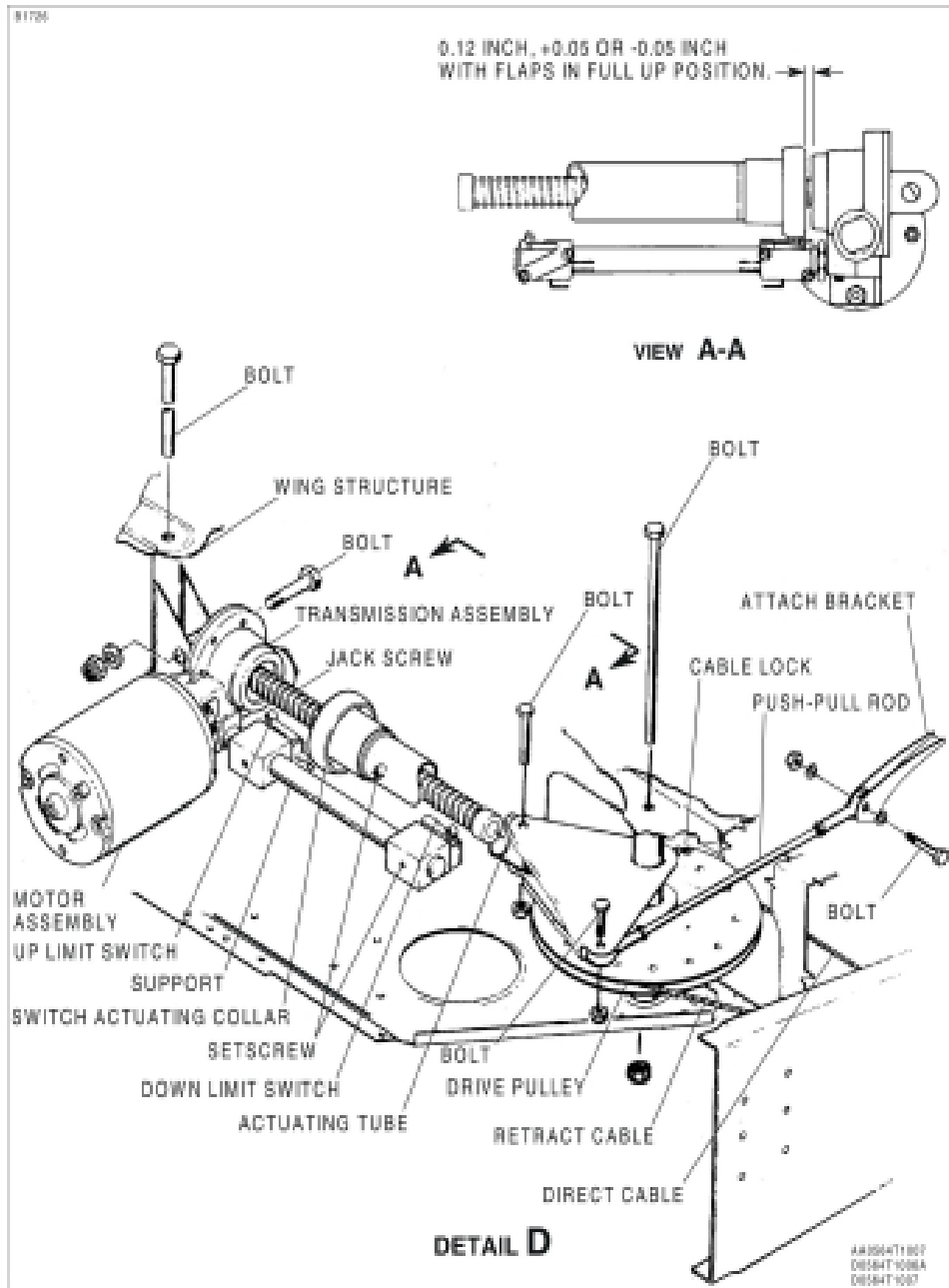
- A. Flap Removal (Refer to Figure 202).
- (1) Make sure that the flap track slot width is 0.5735 inch ± 0.03 or -0.03 inch. If the width of the flap track slot is not in these limits, you must replace the flap track.
 - (2) If necessary, apply 3M Y8671 (or equivalent) polyurethane tape to the upper flap skins. The upper flap skins must not rub against the wing trailing edge.
 - (3) Put the Master Switch in the BATT position and lower the flaps with the flap selector switch.
 - (4) Return the BATT portion of the Master Switch to the OFF position.

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Flap System Installation
 Figure 202 (Sheet 1)

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Flap System Installation
 Figure 202 (Sheet 2)

Lampiran 6 *Broken Shear Coupling Vacuum Pump*

CESSNA AIRCRAFT COMPANY
MODEL 172
MAINTENANCE MANUAL

VACUUM - GENERAL

1. Scope

- A. This chapter describes those units and components used to provide vacuum necessary to operate the artificial horizon and directional gyros.

2. Definition

- A. This chapter consists of a single section which describes those components used to distribute and indicate vacuum air.

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MODEL 172
MAINTENANCE MANUAL

VACUUM SYSTEM - TROUBLESHOOTING

1. Troubleshooting

TROUBLE	PROBABLE CAUSE	REMEDY
OIL IN DISCHARGE.	Damaged engine-driven seal.	Replace gasket.
HIGH SUCTION.	Vacuum regulator filter clogged.	Check filter for obstructions.
LOW SUCTION.	Vacuum regulator leaking. Vacuum pump failure.	Replace vacuum regulator. Substitute known good pump and check pump suction. Replace vacuum pump as required.
LOW PRESSURE.	Vacuum regulator leaking. Vacuum pump failure.	Replace safety valve. Substitute known good pump and check pump pressure. Replace vacuum pump as required.

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VACUUM SYSTEM - MAINTENANCE PRACTICES

1. Description and Operation

- A. The vacuum system has a filter, vacuum gage, vacuum instruments, regulator valve, vacuum manifold, low vacuum annunciator switches, engine-driven vacuum pumps and related plumbing.
- B. On airplanes without Garmin G1000, the source of vacuum air is in the cabin and is pulled through the system by the engine-driven vacuum pumps. This air goes through the gyro filter at the cabin inlet source before it goes through the vacuum gage and gyro instruments. The vacuum is controlled by the regulator valve. The regulator valve is on the aft side of the firewall. The vacuum air is then pulled through the vacuum manifold and past the low vacuum annunciator switches and then into the vacuum pumps.
- C. On airplanes without Garmin G1000, vacuum pressure is measured by the low vacuum annunciator switches in the engine compartment. The vacuum gage in the instrument panel shows the vacuum pressure.
 - (1) The vacuum gage gives a direct indication of the system vacuum in inches of mercury (in.hg.).
 - (2) The low vacuum annunciator switches are part of the panel annunciator warning system.
 - (a) If the left vacuum switch (SN012) senses a vacuum below 3.0 in.hg., the VAC annunciator will show L VAC.
 - (b) If the right vacuum switch (SN011) senses a vacuum below 3.0 in.hg., the VAC annunciator will show VAC R.
 - (c) If both switches sense a vacuum below 3.0 in.hg., the VAC annunciators will show L VAC R.
 - (3) For more information on the maintenance practices for the panel-mounted annunciator (UI005), refer to Chapter 31, Annunciator Panel - Maintenance Practices.
- D. On airplanes with Garmin G1000, the source of vacuum air is in the cabin and is pulled through the system by the engine-driven vacuum pump. The vacuum pressure is measured by a vacuum transducer. The air goes through the gyro filter at the cabin inlet source before it goes through the horizon gyro indicator. The vacuum is controlled by the regulator valve. The regulator valve and the vacuum transducer are on the aft side of the firewall.

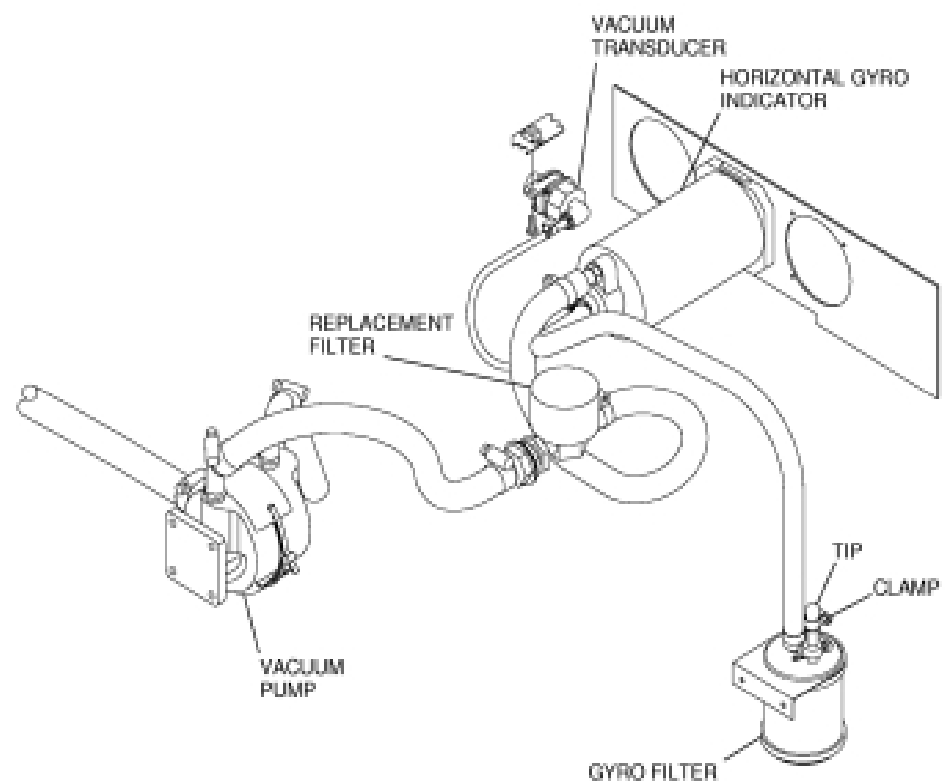
2. Vacuum Pump Removal/Installation

NOTE: Removal/Installation is typical for the vacuum pumps.

- A. Remove the Vacuum Pump (Refer to Figure 201).
 - (1) Remove engine cowl. Refer to Chapter 71, Cowl - Maintenance Practices.
 - (2) Remove the cooling shroud.
 - (3) Disconnect the hoses from the inlet and outlet ports of the vacuum pump.
 - (a) Put caps on the hoses and the vacuum pump ports to prevent entry of foreign object debris.
 - (4) Remove the nuts, lockwashers, and flat washers that attach the vacuum pump to the engine.
 - (5) Remove the vacuum pump from the engine.
 - (6) Remove the elbow from the pump.
 - (7) Replace any damaged fittings or nuts.
- B. Install the Vacuum Pump (Refer to Figure 201).

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DETAIL B
 AIRPLANES WITH GARMIN G1000

Vacuum System Installation
 Figure 201 (Sheet 4)

08/07/06T
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Lampiran 7 AMM 28-20-00 fuel shutoff valve control cable/arm adjustment.

8. Fuel Shutoff Valve Control Cable/Arm Adjustment

- A. Adjust the Fuel Shutoff Cable and Control Arm (Refer to Figure 205).
- (1) Remove the copilot seat. Refer to Chapter 25, Front Seats and Rails - Maintenance Practices.
 - (2) Move the footwell carpet away from the copilot's rudder pedal shields to get access to the shield screws.
 - (3) Remove the screws from the pedal shields.
 - (4) Remove the pedal shields from the airplane.

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- (5) Remove the lock nut.

NOTE: Lock nuts can be used again unless they can be run-up finger tight.

NOTE: When fiber-type self-locking nuts are used again, make sure the fiber locking function has not decreased or become brittle.
- (6) Remove and replace the washers.
- (7) Install the lock nut and tighten to a minimum of 15 inch-pounds to attach the control cable.

NOTE: After the nut is tightened, the swivel clamp must pivot freely in the control arm.
- (8) Lubricate the swivel clamp with a dry film lubricant such as Molykote 321.
- (9) Make sure the control arm moves smoothly.
- (10) Operate the fuel shutoff control cable knob to make sure the fuel shutoff valve control cable/arm connection moves smoothly.
 - (a) Adjust the control assembly until the connection operates smoothly.
 - (b) If adjustment does not give smooth operation, replace the assembly and adjust the control assembly until it operates smoothly.
- (11) Put the copilot's rudder pedal shields in position and attach with the screws.
- (12) Install the footwell carpet.
- (13) Install the copilot's seat. Refer to Chapter 25, Front Seats and Rails - Maintenance Practices.

Lampiran 8 Main wheel disassembly and assembly

C. Install the Axle (Alternate Method) (Refer to Figure 201).

NOTE: If the hole diameter in the tubular strut and the axle is more than 0.0023 inch (0.0584 mm) larger than the diameter of the mounting bolt, you can bond the axle to the strut. Do not let the adhesive go into the tubular strut or axle holes, or touch the bolt threads.

- (1) Before you install the new axle, clean the outer surface of the tubular strut and the inner surface of the axle with solvent.
 - (a) Dry the tubular strut and axle with a clean, lint free cloth immediately.
- (2) Mix EA9309 adhesive and apply a thin smooth layer to the outer surface of the tubular strut where the axle will touch.
- (3) Install the bolt, washer, and nut that attach the axle to the tubular strut.
- (4) Tighten the nut and install the cotter pin. Refer to Chapter 20, Safelying - Maintenance Practices.
- (5) Let the adhesive dry for 24 hours at 75°F (24°C) or 30 minutes at 250°F (121°C), if heating equipment is available.
- (6) Install the brake components and the speed fairing mounting plate to the axle.
- (7) Install the wheel on the axle.
- (8) Connect the hydraulic brake line to the wheel brake cylinder.
- (9) Fill and bleed the hydraulic brake system. Refer to Brakes - Maintenance Practices.
- (10) Install the main wheel speed fairing. Refer to Main Landing Gear - Maintenance Practices.

4. Main Wheel Disassembly/Assembly

A. Disassemble the Wheel (Refer to Figure 202).

WARNING: DO NOT REMOVE THE WHEEL WITH THE TIRE AND TUBE INFLATED WITH AIR. SERIOUS INJURY OR DEATH CAN RESULT.

- (1) Fully deflate the tire and tube.

CAUTION: BE CAREFUL TO PREVENT TOOL DAMAGE TO THE TIRE WHEN YOU REMOVE THE TIRE FROM THE WHEEL HALVES.

- (2) Break loose the tire bead.
- (3) Remove the bolts that attach the wheel halves together.
- (4) Separate and remove the tire and tube from the wheel halves.
- (5) Remove the retaining rings, grease seal retainers, grease seal felts, grease seal retainers and bearing cones.
- (6) The bearing cups (races) are a press fit in the wheel halves and must not be removed unless a new part is to be installed.
 - (a) To remove the bearing cups, heat the wheel half in boiling water for 30 minutes or in an oven, not to exceed 250°F (121°C).
 - (b) Use an arbor press if available, to press out bearing cup and press in a new bearing cup while the wheel half is still hot.

B. Assemble the Wheel (Refer to Figure 202).

- (1) Use grease to prepare the wheel bearing for installation. Refer to Chapter 12, Lubricant - Description and Operation for list of bearing greases.
 - (a) Fill the bearing cone with grease.
 - (b) Add grease to the bearing seals. If felt seals are used, lightly coat all surfaces of the felt with bearing grease. If rubber seals are used, lightly coat the rubber surfaces with bearing grease.
- (2) Install the bearing cone, grease seal retainer, grease seal felt, grease seal retainer and retaining ring into each wheel half.
- (3) Install the tube in the tire. Make sure to align the index marks on the tire and tube.
- (4) Set the wheel half into the tire and tube (side opposite valve stem).
- (5) Install the bolt through the wheel half with a washer under the head of the bolt.

Lampiran 9 Daily Activity

DAILY ACTIVITY REPORT

NAME : Muhammad Aqbar Ansor
 N.I.T : 30421039
 COURSE : TPU 7B
 Competency : ENGINE

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	Rabu 03-04-2024	* PK - APB (Inspection 50 Hours) - flight control cable inspection Ref: AMM 5-20-01 Page 5 & 6 - engine oil change Ref: AMM 12-14-02 Page 301-303	 19692
2	Kamis 04-04-2024	* PK - APK (Inspection 50 Hours) - cleaning air filter Ref: AMM 12-15-00 page 301-303 - cleaning spark plug Ref: AMM 74-20-00	 19692
3	Jumat 05-04-2024	* PK - APE (Inspection 50 Hours) - engine oil change Ref: AMM 12-14-02 Page 301-303 - cleaning air filter Ref: AMM 12-15-00 page 301-303 Ref: AMM 12-15-00 page 301-303	 19692
4	Selasa 23-04-2024	* PK ARY (Inspection 100 Hours) - Clean air filter Ref: AMM 12-20-00 Page 02 - cleaning spark plug Ref: AMM 74-20-00 page 03	 19692
5	Rabu 25-04-2024	* PK ARX (Inspection 100 Hours) - control cable inspection Ref: AMM 27-00-00 Page 05 - engine oil change Ref: AMM 12-10-00 page 05	 19692

DAILY ACTIVITY REPORT

NAME : Muhammad Akbar Ansor
 N.I.T : 304 210 39
 COURSE : TPV 7B
 Competency : ENGINE

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	2	3	
7	Selasa 30-04-2024	* PK APD (Inspection 100 Hours) - flight control cable inspection Ref: AMM 5-20-01 page 5 & 6 - servicing fuel strainer Ref: AMM 28-20-00 page 220 - cleaning spark plug Ref: AMM 74-20-00	 10248
8.	Jumat 03-05-2024	* PK APP (Inspection 100 Hours) - servicing fuel strainer Ref: AMM 28-20-00 page 220 - cleaning spark plug Ref: AMM 74-20-00	 10248
9.	Selasa 07-05-2024	* PK BVS - engine oil change Ref: AMM 12-14-02 page 301-303 - cleaning spark plug Ref: AMM 74-20-00 - servicing main wheel Ref: main wheel disasm/assem AMM 32-40-00 page 303-305	 10248
10	Jumat 17-05-2024	* PK APD (Inspection 50 Hours) - engine oil change Ref: AMM 12-14-02 page 301-303 - cleaning spark plug Ref: AMM 74-20-00	 10248

DAILY ACTIVITY REPORT

NAME : Muhammad Akbar Anzor
 N.I.T : 30421039
 COURSE : TPU 7B
 Competency : ENGINE

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	2	3	
11	Senin 27-05-2024	* PK APA (Inspection 100 Hours) - flight control cable inspection Ref: AMM 5-20-01 page 5 & 6 - Servicing main wheel Ref: main wheel disassembly / assembly AMM 32-40-00 page 203	<i>Yh</i> 10248
12	Selasa 28-05-2024	* PK BYS (Inspection 50 Hours) - engine oil change Ref: AMM 12-14-02 page 301-303 - cleaning spark plug Ref: AMM 74-20-00	<i>Yh</i> 10248
13	Jumat 31-05-2024	* PK BYC (Inspection 50 Hours) - cleaning air filter Ref: AMM 12-15-00 page 301-303 - cleaning spark plug Ref: AMM 74-20-00	<i>Yh</i> 10248
14	Senin 03/06/2024	* PK BYL (Inspection 100 Hours) - Engine oil change Ref: AMM 12-14-02 page 301-303 - Servicing fuel strainer Ref: AMM 28-20-00 page 220	<i>Yh</i> 10248
15	Jumat 07-06-2024	* PK BYD (Inspection 100 Hours) - cleaning spark plug Ref: AMM 74-20-00	<i>Yh</i> 10248

DAILY ACTIVITY REPORT

NAME : Muhammad Akbar Angor
 N.I.T : 30421030
 COURSE : TPU 7B
 Competency : AIRCRAFT STRUCTURE (HEAVY MAINTENANCE)

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	Senin	* PK BYM	
	01-04-2024	- Replace seal / o-ring nose landing gear Ref: AMM 32-20-00	[Signature] / 9692
2	Kamis	* PK BYD	
	04-04-2024	- Replace fuel shut off valve control cable Ref: AMM 28-20-00	[Signature] / 9692
3	Selasa	* PK ARY	
	23-04-2024	- Replace rockerbox gasket due to oil leak Ref: AMM 71-00-00	[Signature] / 9692
4	Rabu	* PK APF	
	24-04-2024	- Replace Magneto Ref: AMM 24-10-00	[Signature] / 9692
5	Jumat	* PK BYC	
	26-04-2024	- Fill and bleed system due to lack of fluid in master cylinder brake system Ref: AMM 32-42-00 Page 207	[Signature] / 9692
6	Rabu	* PK BYR	
	08-05-2024	- Replace left main wheel Ref: AMM 32-10-00	[Signature] / 10245
7	Senin	* PK BYL	
	13-05-2024	- Pitot tube servicing Ref: AMM 54-11-00	[Signature] / 10245
8	Selasa	* PK APD	
	14-05-2024	- Replace main wheel Ref: AMM 32-10-00	[Signature] / 10245
9	Rabu	* PK APF	
	15-05-2024	- Replace main wheel Ref: AMM 32-10-00 - Replace shear coupling Ref: AMM	[Signature] / 10245

DAILY ACTIVITY REPORT

NAME : Muhammad Aqbar Anyor
 N.I.T : 30421039
 COURSE : TPU 7B
 Competency : AIRCRAFT STRUCTURE (HEAVY MAINTENANCE)

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	2	3	4
10	Selasa 21-05-2024	* PK ARX - Cleaning sparkplug Ref: AMM 74-20-00 - Servicing magneto timing Ref: AMM 74-10-00	 10248
11	Selasa 04-06-2024	* PK BYD - Servicing seat adjustable height broken Ref: AMM 25-10-00 page 212	 10248
12	Kamis 06-06-2024	* PK BYC - Servicing spring seat broken Ref: AMM 25-10-00	 10248
13	Senin 10-06-2024	* PK APA - Servicing clevis bracket seat broken Ref: AMM 25-10-00 page 212-213	 10245
14	Kamis 13-06-2024	* PK APO - Servicing light indicator up and down landing gear Ref: AMM C 1725-2350 page 23 - Servicing low vacuum Ref: AMM 37-10-00	 10245
15	Senin 24-06-2024	* PK APF - Replace main wheel Ref: AMM 32-10-00	 10245
16	Rabu 26-06-2024	* PK BXC - Engine external magneto timing Ref: AMM 74-10-00 - Replace CHT Ref: AMM 77 chapter 77	 10245

DAILY ACTIVITY REPORT

NAME : Muhammad Akbar Anzor
N.I.T : 30421039
COURSE : TPU 2B
Competency : AIRCRAFT STRUCTURE (HEAVY MAINTENANCE)

[illegible]

DAILY ACTIVITY REPORT

NAME : Muhammad Aubar Ansor
 N.I.T : 30421034
 COURSE : TPV 7B
 Competency : LINE MAINTENANCE

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	2	3	4
1	Selasa 02-04-2024	* PK APK - Preflight, Ground run, Refueling, Refill oil Ref: POM & ANM 12-14-01 page 301	f. / 5531
2	Rabu 03-04-2024	* PK BXD - Preflight, Ground run, Refueling, Refill oil	f. / 5531
3	Kamis 04-04-2024	* PK APB - Refueling, Refill oil Ref: POM & ANM 12-14-01 page 301	f. / 5531
4	Jumat 05-04-2024	* PK APC - Preflight, Ground run Ref: POM & ANM 12-14-01	
5	Senin 22-04-2024	* PK BXD - Preflight, Ground run Ref: POM & ANM 12-14-01	f. / 10245
6	Selasa 23-04-2024	* PK APP - Refueling Ref: POM & ANM 12-14-01	f. / 10245
7	Kamis 25-04-2024	* PK APF - Refueling, Refill oil Ref: POM & ANM 12-14-01	f. / 10245
8	Senin 29-04-2024	* PK BYC - Refueling Ref: POM & ANM 12-14-01	f. / 10245
9	Selasa 30-04-2024	* PK APD - Preflight, Ground run Ref: POM & ANM 12-14-01	f. / 10245

DAILY ACTIVITY REPORT

NAME : Muhammad Akbar Ansor
 N.I.T : 30421059
 COURSE : TPO 7B
 Competency : LINE MAINTENANCE

No.	Day and Date	Description of Activity	Supervisor Sign and Stamp
1	2	3	4
10	Kamis 02-05-2024	* PK APP - Preflight, Ground run Ref: POM & AMM 12-14-01 page 301	 19692
11	Jumat 03-05-2024	* PK APD - Refueling Ref: POM & AMM 12-14-01 page 301	 19692
12	Selasa 07-05-2024	* PK APP - Refueling, Refill oil Ref: POM & AMM 12-14-01 page 301	 19692
13	Rabu 08-05-2024	* PK BYR - Preflight, Refueling Ref: POM & AMM 12-14-01 page 301	 19692
14	Jumat 14-05-2024	* PK BYS - Preflight, Ground run Ref: POM & AMM 12-14-01 page 301	 19692
15	Kamis 16-05-2024	* PK BYL - Refueling, Refill oil Ref: POM & AMM 12-14-01 page 301	 10245
16	Senin 20-05-2024	* PK - APK - Preflight, Ground run Ref: POM & AMM 12-14-01 page 301	 10245
17	Jumat 31-05-2024	* PK - BYD - Preflight, Ground run Ref: POM & AMM 12-14-01 page 301	 10245
18	Selasa 04-06-2024	* PK BYR - Refueling, Refill oil Ref: POM & AMM 12-14-01 page 301	 10245