

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

A9EU
Revision 8
AERMACCHI S.p.A.
S.205 - 18/F
S.205 - 18/R
S.205 - 20/F
S.205 - 20/R
S.205 - 22/R
S.208
S.208A
May 14, 1997

TYPE CERTIFICATE DATA SHEET No. A9EU

This data sheet which is a part of type certificate No. A9EU prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

<u>Type Certificate Holder.</u>	AERMACCHI S.p.A. Via P. Foresio, 1 21040 Venegono Superiore (VA) Italy
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I. Model S.205 - 18/F, 4PCLM (Utility Category), Approved March 7, 1966. Model S.205 - 18/R, 4PCLM (Utility Category), Approved June 7, 1966. (Model S.205 - 18/R same as Model S.205 - 18/F except for retractable landing gear)

<u>Engine.</u>	Lycoming O-360-A1A
<u>Fuel.</u>	91-96 minimum grade aviation gasoline
<u>Engine Limits.</u>	For all operations, 2700 r.p.m. (180 hp.) See NOTE 2 (a)(3)
<u>Propeller and Propeller Limits.</u>	Hartzell HC-C2YK-1B/7666A-2 Diameter: Maximum 74 in., minimum allowable for repairs 72 in. (no further reduction permitted) Pitch setting at 30 in. radius: Low 12° High 29°
<u>Airspeed Limits.</u>	Never exceed 201 m.p.h. Maximum structural cruising 150 m.p.h. Maneuvering 137 m.p.h. Landing Gear Extended 109 m.p.h. (Model S.205 - 18/R) Flaps extended 102 m.p.h.
<u>C.G. Range (Landing Gear Extended)</u>	(+94.8) to (+102.2) at 2314 lb. or less (+99.1) to (+102.2) at 2645 lb. Straight line variation between points given.
<u>Empty Weight C.G. Range.</u>	None
<u>Maximum Weight.</u>	2645 lb.
<u>No. Seats.</u>	2 (+87.2) 2 (+119.3)
<u>Maximum Baggage.</u>	132 lb. (+147.6)

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Fuel Capacity. 55.5 gal. total; 55 gal. usable (2 wing tanks) (+99.9)
See NOTE 1 for unusable fuel.

Oil Capacity. 2 gal. (+31.5) (Unusable Oil - 2 qt.)
See NOTE 1 for system oil

II. Model S.205 - 20/F and S.205 - 20/R, 4 PCLM (Normal Category), Approved June 7, 1966.

(Model S.205 - 20/F same as Model S.205 - 18/F except for increased maximum weight and Power Plant Installation)
(Model S.205 - 20/R same as Model S.205 - 20/F except for retractable landing gear).

Engine. Lycoming IO-360-A1A

Fuel. 100-130 minimum grade aviation gasoline

Engine Limits. For all operations, 2700 r.p.m. (200 hp.) (See NOTE 2 (c)(1))

Propeller and Propeller Limits. Hartzell HC-C2YK-1B/7666A-2
Diameter: Maximum 74 in., minimum allowable for repairs 72° in.
(No further reduction permitted)
Pitch setting at 30 in., radius: Low 14°, High 29°

Airspeed Limits.

Never exceed	201 m.p.h.
Maximum structural cruising	150 m.p.h.
Maneuvering	137 m.p.h.
Landing gear extended	109 m.p.h. (Model S.205 - 20/R)
Flaps extended	102 m.p.h.

C.G. Range (Landing Gear Extended). (+94.8) to (+102.2) at 2314 lb. or less
(+99.1) to (+102.2) at 2866 lb.
Straight line variation between points given.

Empty C.G. Range. None

Maximum Weight. 2866 lb.

No. Seats. 2 (+87.2). 2 (+119.3)

Maximum Baggage. 132 lb. (+147.6)

Fuel Capacity. 55.5 gal. total; 55 gal. usable (2 wing tanks) (+99.9)
See NOTE 1 for unusable fuel

Oil Capacity. 2 gal. (+31.5) Unusable oil - 2 qt.)
See NOTE 1 for system oil

III. Model S.205 - 22/R, 4PCLM (Normal Category), Approved June 7, 1966.

(Same as Model S.205 - 20/R except for Power Plant and Propeller installation, increased maximum weight, number of seats, increased maximum baggage).

Engine. Franklin 6A-350-C1

Fuel. 100-130 minimum grade aviation gasoline

Engine Limits. For all operations, 2800 r.p.m. (220 hp.)

<u>Propeller and Propeller Limits.</u>	McCauley 2A31C21/84S-4 Diameter: Maximum 80 in., minimum allowable for repairs 78 in. (No further reduction permitted) Pitch setting at 30 in. radius: Low 11°20', High 20°50'
	Or: Hartzell HC-C2YF-1B/8459-4 Diameter: Maximum 80 in., minimum allowable for repairs 78 in. (No further reduction permitted) Pitch setting at 30 in. radius: Low 11°, High 30°30'
<u>Airspeed Limits.</u>	Never exceed speed 201 m.p.h. Maximum structural cruising 150 m.p.h. Maneuvering 137 m.p.h. Landing gear extended 109 m.p.h. Flaps extended 102 m.p.h.
<u>C.G. Range (Landing Gear Extended).</u>	(+94.8) to (+102.2) at 2314 lb. or less (+99.1) to (+102.2) at 2976 lb. Straight line variation between points given.
<u>Empty Weight C.G. Range.</u>	None
<u>Maximum Weight.</u>	2976 lb.
<u>No. Seats.</u>	2 (+87.2). 2 (+119.3) (See NOTE 5 and 6)
<u>Maximum Baggage.</u>	176 lb. (+147.6) (See NOTE 5)
<u>Fuel Capacity.</u>	55.5 U.S. gal. total; 55 U.S. gal. usable (2 wing tanks) (+99.9) (See NOTE 1 for unusable fuel) (See NOTE 7 for wing tip tanks)
<u>Oil Capacity.</u>	8.8 U.S. qt. (+31.5) (Unusable oil - 2 qt.) See NOTE 1 for system oil.

IV. Model S.208, 4 PCLM (Normal Category), Approved May 24, 1968.

(Same as Model S.205 - 22/R except for powerplant and propeller installation.
See NOTE 8 for conversion into S.208A model)

<u>Engine.</u>	Lycoming O-540-E4A5
<u>Fuel.</u>	91-96 minimum grade aviation gasoline
<u>Engine Limits.</u>	For all operations, 2700 r.p.m. (260 hp.) (See NOTE 2(d)(1))
<u>Propeller and Propeller Limits.</u>	Hartzell: HC-C2YK-1B/8467-8R Diameter: Maximum 76 in., minimum allowable for repairs 75 in. (No further reduction permitted) Pitch setting at 30 in., radius: Low 15°30', High 32° Or: Hartzell HC-C2YK-1B/8477-8R Diameter: Maximum 76 in., (No reduction permitted) Pitch setting at 30 in. radius: Low 15°30', High 32°

<u>Airspeed Limits.</u>	Never exceed speed	201 m.p.h.
	Maximum structural cruising	150 m.p.h.
	Maneuvering	137 m.p.h.
	Landing gear extended	109 m.p.h.
	Flap extended	102 m.p.h.
<u>C.G. Range (Landing Gear Extended).</u>	(+94.8) to (+102.2) at 2314 lb. or less (+99.1) to (+102.2) at 2976 lb. Straight line variation between points given.	
<u>Empty Weight C.G. Range.</u>	None	
<u>Maximum Weight.</u>	2976 lb.	
<u>No. of Seats.</u>	2 (+87.2), 2 (+119.3). (See NOTE 5)	
<u>Maximum Baggage.</u>	176 lb. (+147.6). (See NOTE 5)	
<u>Fuel Capacity.</u>	55.5 U.S. gal. total; 55 U.S. gal. usable (2 wing tanks) (+99.9) (See NOTE 1 for unusable fuel) (See NOTE 7 for wing tip tanks)	
<u>Oil Capacity.</u>	12 U.S. qt. (+31.5) (Unusable oil - 2.75 qt.) (See NOTE 1 for system oil)	

V. Model S.208A, 5 PCLM (Normal Category), Approved June 17, 1974.

(Same as Model S.208 except for increased maximum weight, number of seats and increased maximum baggage).

<u>Engine.</u>	Lycoming O-540-E4A5	
<u>Fuel.</u>	91-96 minimum grade evaluation gasoline	
<u>Engine Limits.</u>	For all operations, 2700 r.p.m. (260 hp.) (See NOTE 2(d)(1)).	
<u>Propeller and Propeller Limits.</u>	Hartzell HC-C2YK-1B/8467-8R Diameter: Maximum 76 in. minimum allowable for repairs 75 in. (No further reduction permitted) Pitch setting at 30 in. radius: Low 15°30', High 32° Or: Hartzell HC-C2YK-1B/8477-8R Diameter: Maximum 76 in. (No reduction permitted) Pitch setting at 30 in. radius: Low 15°30', High 32°	
<u>Airspeed Limits.</u>	Never exceed speed	209 m.p.h.
	Maximum structural cruising	166 m.p.h.
	Maneuvering	142 m.p.h.
	Landing gear and flap extended	115 m.p.h.
<u>C.G. Range (Landing Gear Extended)</u>	(+94.8) to (+102.2) at 2645 lb. or less (+101.2) to (+102.2) at 3318 lb. Straight line variation between points given.	
<u>Empty Weight C.G. Range.</u>	None	
<u>Maximum Weight.</u>	3318 lb.	
<u>No. Seats.</u>	2 (+87.2), 2 (+118.1), 1(+147.6)	

<u>Maximum Baggage.</u>	220 lb. (+147.6). See NOTE 2(k) for placard
<u>Fuel Capacity.</u>	86 U.S. gal. total 83.5 U.S. gal. usable (2 wing tanks of 27.8 U.S. gal. each (+99.9) (2 tip tanks of 15.2 U.S. gal. each (+101.7) (See NOTE 1 for unusable fuel).
<u>Oil Capacity.</u>	12 U.S. qt. (+31.5) (Unusable oil - 2.75 qt.) (See NOTE 1 for system oil)

DATA PERTINENT TO ALL MODELS

<u>Datum.</u>	40.2 in. forward of center line of nose gear attachment bolts.															
<u>Leveling Means.</u>	Three screws on baggage compartment bulkheads.															
<u>Control Surface Movements.</u>	<table> <tr> <td>Wing flaps</td> <td></td> <td>Down 43° ± 1°</td> </tr> <tr> <td>Ailerons</td> <td>Up 22° ± 1°</td> <td>Down 15° ± 1°</td> </tr> <tr> <td>Elevator</td> <td>Up 30° ± 1°</td> <td>Down 20° ± 1°</td> </tr> <tr> <td>Rudder</td> <td>Right 25° ± 1°</td> <td>Left 25° ± 1°</td> </tr> <tr> <td>Elevator Trim Tab</td> <td>Up 22° ± 1°</td> <td>Down 26° ± 1°</td> </tr> </table>	Wing flaps		Down 43° ± 1°	Ailerons	Up 22° ± 1°	Down 15° ± 1°	Elevator	Up 30° ± 1°	Down 20° ± 1°	Rudder	Right 25° ± 1°	Left 25° ± 1°	Elevator Trim Tab	Up 22° ± 1°	Down 26° ± 1°
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Elevator Trim Tab	Up 22° ± 1°	Down 26° ± 1°														
<u>Certification Basis.</u>	<p>FAR - 21.29 - FAR 23 effective February 1, 1965, for models S.205 and S.208. FAR 23 effective February 1, 1965, including amendments 23-1, -4, -5, and -6 for Model S.208A. Type Certificate No. A9EU issued March 7, 1966. Date of Application for Type Certificate June 30, 1965.</p>															
<u>Serial Nos. Eligible.</u>	<p>The Registro Aeronautico Italiano (R.A.I.) Certificate of Airworthiness endorsed as noted below under "Import Requirements" must be submitted for each individual aircraft for which certification is made.</p>															
<u>Import Requirements.</u>	<p>To be considered eligible for operation in the United States each aircraft manufactured under this type certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language): This aircraft conforms to its U.S. type design (type certificate number A9EU) and is in a condition for safe operation.</p> <p>The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c).</p> <p>The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country of manufacture (e.g., third party country) is FAR Sections 21.183(d) and 21.183(b).</p>															
<u>Service Information.</u> and	<p>Service bulletins, structural repair manuals, vendor manuals, aircraft flight manuals, overhaul and maintenance manuals, which contain a statement that the document is (include specific CAA) approved, are accepted by the FAA and are considered FAA approved. These approvals pertain to the type design only.</p>															
<u>Equipment.</u> addition, the	<p>The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the aircraft for certification. In following items of equipment are required:</p> <p>(a) Pre-stall warning indicator, Safe Flight Instrument Corp. 164 S. (P/N NS5F026) (All models) .51b +67</p>															

- Equipment. (cont'd)
- (b) R.A.I. Approved Airplane Flight Manual
- (1) Flight Manual dated February 23, 1966 for Model S.205 - 18/F
 - (2) Flight Manual dated April 14, 1966 for Model S.205 - 18/R
 - (3) Flight Manual dated April 14, 1966 for Model S.205 - 20/F
 - (4) Flight Manual dated April 14, 1966 for Model S.205 - 20/R
 - (5) Flight Manual dated May 27, 1966 for Model S.205 - 22/R
 - (6) Flight Manual dated March 5, 1968 for Model S.208.
 - (7) Flight Manual dated January 18, 1973 for Model S.208A

NOTES.

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at time of original certification, and at all times thereafter. The certificated empty weight and corresponding center of gravity locations must include:

- Unusable fuel 3.3 lbs. at (+99.9) (wing tanks) for all models.
- Unusable fuel 12 lbs. at (+101.7) (tip tanks) for model S.205 - 22/R and S.208 when wing tip tanks are installed (See NOTE 7) and for model S.208A.

System oil of 1 lb. at (+31.5) and unusable of 3.0 lb. at (+99.9)

NOTE 2. The following placards must be displayed in front and in clear view of pilot:

- a) For Models S.205-18/F and S.205-18/R:
 - (1) "THIS AIRPLANE MUST BE OPERATED AS A UTILITY CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND THE FLIGHT MANUAL."
 - (2) "ACROBATIC MANEUVERS ARE LIMITED TO THE FOLLOWING:

CHANDELLES	150 mph TIAS
LAZY EIGHTS	160 mph TIAS
STEEP TURNS	125 mph TIAS
STALLS (Except with stalls) SLOW DECELERATION"	
 - (3) "AVOID CONTINUOUS OPERATIONS BETWEEN 2000 AND 2250 RPM"
 - b) For Models S.205-20/F, S.205-20/R, S.208 and S.208A:
 - (1) "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND THE FLIGHT MANUAL."
 - (2) "NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED"
 - c) For Models S.205-20/F and S.205-20/R:
 - (1) "AVOID CONTINUOUS OPERATION BETWEEN 2100 AND 2350 RPM"
 - d) For Models S.208 and S.208A: (When Hartzell HC-C2YK-1B/8467-8R propeller is installed)
 - (1) "AVOID CONTINUOUS OPERATION BETWEEN 2500 AND 2600 RPM ABOVE 25" HG. MANIFOLD PRESSURE."
 - e) For Models S-205 -18/R; -20/R; -22/R and S.208:
 - (1) "DO NOT LOWER LANDING GEAR ABOVE 109 MPH CAS".
 - f) For Models S.208A:
 - (1) "DO NOT LOWER LANDING GEAR ABOVE 115 MPH CAS".
 - g) For Models S.205 and S.208:
 - (1) "MAX MANEUVERING SPEED FOR FULL APPLICATION OF CONTROLS IS 137 MPH CAS. MAX CROSSWING VELOCITY: 15 KNOTS".
 - (2) "USE WING TIP TANKS IN LEVEL FLIGHT ONLY".
- On Baggage Door:
- i) For Models S.205-18/F; -18/R, -20/F and 20/R:
 - (1) "MAX LOAD IN THIS COMPARTMENT : 132 LBS".
 - j) For Model S.205 -22/R and S.208:
 - (1) "MAX LOAD IN THIS COMPARTMENT : 176 LBS".
 - k) For Model S.208A:
 - (1) "MAX LOAD IN THIS COMPARTMENT (220 LBS) INCLUDES THE BAGGAGE AND/OR FIFTH PASSENGER".

- NOTE 3. Each individual airplane will be supplied with a placard that specified the kinds of operations such as VFR or IFR, Day or Night, to which the operation of the airplane is limited by the equipment installed.
- NOTE 4. The aircraft must be assembled and inspected in accordance with Registro Aeronautico Italiano approved Report No. 77, dated June 19, 1967 and later RAI-approved revision, "SIAI S.205-22/R Aircraft Assembly and Test procedure at the Waco Plant".
- NOTE 5. The fifth seat installation Drwg. No. 205-0-027-01 includes assemblies Part Nos. 205-2-038-01 (fifth seat at + 147.6) and 205-2-041-101 and -102 (rear seat a + 118.1) as defined in the Technical Instruction No. 205 I-3A. When the fifth seat is installed, the Appendix "2" of respective Flight Manuals must be followed and this placard must be installed in the baggage compartment:
- "THE MAXIMUM LOAD IN THIS COMPARTMENT (176 lbs.) INCLUDES THE BAGGAGE AND/OR FIFTH PASSENGER".
- NOTE:
On aircraft having the following Serial Nos., the fifth seat installation has been carried out by using two rear seats of fixed type with an arm of (+118.1):
- | | |
|-------------------|--|
| Model S.205-22/R: | 373; 385; 4-142 to 4-158 inclusive;
4-176 to 4-194 inclusive. |
| Model S.208: | 002; 003. |
- NOTE 6. Installation of baggage compartment windows, as defined in Technical Instruction No. 205 I-8, is optional on S.205-22/R aircraft to be modified for the installation of fifth seat in the same compartment.
- NOTE 7. The wing tip tank installation, Dwg. 205-8-197, includes the assemblies, part No. 205-8-193-01 and -02 (left and right wing tip tank) of 30.5 U.S. Gal. total capacity (15.25 gallons each tank) usable 28.5 U.S. Gal., at (+101.7), as defined in the Technical instruction No. 205 I-7. When the wing tip tanks are installed, the "Appendix 3" of S.205-22/R and S.208 Flight Manual must be followed and this placard installed on the instrument panel, near to the fuel level indicator selector switch:
"USE WING TIP TANKS IN LEVEL FLIGHT ONLY".
- NOTE 8. The Model S.208 may be converted into S.208A:
- a. By modifying it in accordance with "Technical Instruction No. 208I-1" by using "Kit P/No. 208I-1";
 - b. By replacing the nameplate and the Flight Manual with those for Model S.208A; and,
 - c. By accomplishing the modifications reported on NOTES 5 (see NOTE 9 for the S.208 aircraft S/N 001) and 7, if they are not already installed.
- NOTE 9. The S.208 aircraft Serial No. 001 has been converted into S.208A without fifth seat installation with the rear seat, P/N 205-2-003, installed having an arm of (+119.3). In the baggage compartment is installed the placard:
"MAX LOAD IN THIS COMPARTMENT : 220 LBS".
- NOTE 10. As of January 1, 1997, AERMACCHI S.p.A. has acquired SIAI Marchetti S.r.L.