

## Aerokopter AK1-3

The Aerokopter Design Bureau at Poltava was founded on 14 December 1999. The AK1 two-seat light-weight helicopter flew first on 12 October 2001, and the Ukrainian AP-27 type certificate was awarded on 30 June 2006. The AK1-3 is powered by a 110 kW Subaru EJ 2.5 automobile engine which is non-type certified (the helicopter was certified together with the engine in Ukraine). That is why the AK1-3 is registered in the West as a 'factory-built kit helicopter'. The small chopper weighs only 390 kg, that allows to transport it on a small trailer which simultaneously serves as a mobile landing strip for the helicopter. The price tag is some \$ 150,000, a bit cheaper than a Robinson R22. 40 AK1-3s had been built by early 2012. Unfortunately, many of them have suffered accidents. A modernised version under the designation AK2 "Vityaz" was planned to be introduced in 2012. The Italian company Egicopter SRL of Lissone offers the AK1-3 as the EK-1 and a version powered by a Belgian ULPower 350 engine as the MG-1. No sales are known. Apart from that, the SAFAT Aviation Complex of Sudan is locally assembling the type and markets it as the SAFAT 02 (24 had been assembled by November 2015). A version called "Orlan" was developed at Perm (Russia). It is based on the power train and slightly modified frame of the AK1-3, but has got a different cockpit and is built without parts manufactured by Aerokopter. Some five had been built by late 2017.

### AK1 built by KB Aerokopter at Poltava from 2001

0000	GL-0478	AK1-5	Aerokopter	f/f	12oct01	prototype, with five-blade main rotor; named 'Sanka' after Alexander Zapishni, the first chief designer of Aerokopter who was killed in a motor hang-glider accident 31may00; in green c/s, no titles; displayed at the Manufacturing & Security Exhibition at Kiev sep02; used as a ground instructional airframe in a classroom of the Kremenchug Flying College of the National Aviation University (KLK NAU)
0001	no reg	AK1-3	Aerokopter	f/f	jul03	first series-production helicopter, with three-blade main rotor; displayed uncompleted at Manufacturing & Security Exhibition at Kiev sep02; used for trials; in green c/s, no titles; f/n PLV 01dec05
	F-WSAK	AK1-3	Aero Systèmes	trf	2006	Aero Systèmes de La Chapelle-Vendômoise (France); permit issued jan06; in turquoise c/s, no titles
	F-PSAK	AK1-3	Aero Systèmes	rgd	12jan07	t/t more than 1,000 hours by autumn 2008; canx 23dec08 as exported to Italy
	no reg	EK-1	Egicopter	ph.	18jun11	in Ozzano Emilia; c/n not confirmed (MG-1 I-B197 might have been this c/n); in white c/s, no titles
0002	GL-0668	AK1-3	Aerokopter	PLV	09dec03	in turquoise c/s, no titles
	GL-0668	AK1-3	Ukrainian Police	PLV	28aug04	in turquoise c/s with 'Derzhavtoinspektsiya' (State Vehicle Inspection) titles and coat-of-arms; l/n PLV 24jun05
	LA-0668	AK1-3	Aerokopter	Gos	jun06	in silver c/s, probably no titles
0003	UR-GVV	AK1-3	V.V. Grinchenko	no	reports	V.V. Grinchenko of Krivyy Rih; damaged at Brechkovka (Poltava region) in 2005 on auto-rotation landing training during factory trials when touched down hard and the main rotor hit and destroyed the tailboom; repaired; based at Krivyy Rih; canx 01oct08; mentioned in an insurance document of the Kremenchug Flying College of the National Aviation University (KLK NAU) 10oct08
0004	not known	AK1-3	Aerokopter	ph.	18may06	reportedly owned by Ataman Andrei Drofa of Bila Tserkva; in black c/s, no titles; dbr 18may06 on a training flight at Bila Tserkva, officially the fuel line got constipated, the engine lost power and the helicopter crash-landed in a garden at 42 Budyonny street, damaging a roof and a car, the instructor got slightly injured but the trainee (the owner) escaped without injuries, in reality but unofficially pilot error was the cause of the accident
0005	UR-GLG	AK1-3	L.O. Grinchenko	mfd	18apr06	L.O. Grinchenko of Krivyy Rih; in bordeaux c/s, no titles; f/n PLV 06jun06; l/n ZTR 24may08; canx 01oct08
	UR-MPP	AK1-3	M Aero Korp	rgd	08jul09	based at Vasylivka; canx 20nov14 and restored 03apr15
0006	UR-AKIZ	AK1-3	Aerokopter	ZIA	21aug07	in silver c/s, no titles; force-landed into a pond near Kiev in 2007 after the electronic engine control system had led to a loss of power; l/n PLV 04oct07; severely damaged later in 2007 when the engine failed in-flight because a roller in the gas distribution mechanism had not been exchanged after the water landing, the helicopter crash-landed on a steep slope near Shishaki (Dykanka district of the Poltava region) and suffered considerable damage, pilot injured; not on register 30jan12
0007	UR-GVG	AK1-3	no titles	PLV	2008 ?	in green c/s; not on register 30jan12; c/n not confirmed
	EW-261SL	AK1-3	Gomelkhimservis	GME	16oct07	in green c/s with 'GAI' titles; w/o 16oct07 on a training flight at Gomel when the engine failed at a height of 300 metres due to crew error and the helicopter crash-landed very hard close to the runway threshold, both crew injured
0008	ZU-RNJ	AK1-3	Ariques Trust	rgd	11dec07	arrived at Cape Town 13dec07; in yellow c/s, no titles; f/n Saldanha 14jun08; l/n Langebaanweg 25apr09
0009	ZU-RIT	AK1-3	Snykor CC	rgd	21dec07	owned by George Snyman; in yellow c/s, no titles; arrived at Cape Town 13dec07; based at Nelspruit; f/n NLP 06jan08 (test-flown that day); l/n White River 26apr09; w/o 30aug09 on a flight from Klaserie to Rhenosterkop when probably a failure of the electronic cruise control governor caused the engine to fail and the helicopter to lose rotor rpm, the helicopter crashed onto an open grassy area in the Heidelberg valley 5 km south-west of White River (N25.35462, E30.96621) and exploded, all 3 occupants (pilot Snyman and two little girls) killed; t/t not known but the pilot had 179 hours on the type
0010	ZU-LAC	AK1-3	Chris Landman	rgd	12dec07	Chris Landman Beleggings (Pty); arrived at Cape Town 13dec07; in blue c/s, no titles; based at Nelspruit; f/n NSP 08mar08; l/n NSP 24feb09
0011	ZU-RDN	AK1-3	Pearl Coral 1156	rgd	03jan08	arrived at Cape Town 13dec07
	ZU-RDN	AK1-3	J.L. Lawson	rgd	06aug08	in green c/s, no titles; f/n Langebaanweg 25apr09
	F-PDAK	AK1-3	Didier Daigrement	rgd	02jun08	Didier Daigrement of Blois le Breuil; in silver c/s, no titles; f/n St. Cyr-l'Ecole 29nov08; l/n St. Cyr-l'Ecole 19nov09
0013	not known	AK1-3				
0014	"014" black	AK1-3		Tac	17aug13	in silver c/s, no markings apart from serial
0015	ZU-ETU	AK1-3	Nkorho Bush Lodge	rgd	12dec07	Nkorho Bush Lodge (Pty) Ltd., owned by Dirk Becker; in black c/s, no titles; arrived at Cape Town 13dec07; based at Nelspruit; f/n NSP 23may08; w/o 30oct08 on a flight from Renosterkop to the Nkorho Bush Lodge when the engine lost power due to the unstable operation of the engine speed governor, the pilot made a successful auto-rotation landing on an open grass-covered area in the Sabi Sands Game Reserve (Limpopo province) some 10 km north-west of the lodge, the hot gasses from the engine exhaust set the dry grass of the veld on fire and strong winds fanned the flames, resulting in the helicopter catching fire and burning out; the pilot sustained a minor injury; t/t 93 hours
0016	not known	AK1-3				
0017	F-PAKS	AK1-3	Aero Systèmes	rgd	20may11	Aero Systèmes de La Chapelle-Vendômoise (France); in silver c/s, no titles; f/n Blois-le-Breuil 03sep11
0018	UR-ABCG	AK1-3	Aerokopter	ph.	10aug09	in silver c/s, no titles; severely damaged 10aug09 when probably suffered an engine problem and made a heavy landing on a meadow near Saass (Upper Austria), pilot injured; hulk evacuated 11aug09; canx 15sep11
0019	UR-LIBO	AK1-3	no titles	mfd	2008	in silver c/s; was based in Czechia but could not be registered there; offered for sale 01jun09 with t/t some 50 hours; not on register 30jan12
0020	not known	AK1-3				
0021	UR-NNM	AK1-3	Kremenchug Fl.Sch.	mfd	01feb08	Kremenchug Flying College of the National Aviation University (KLK NAU); rgd 19aug08; toc 02oct08; in silver c/s with 'KLK NAU' titles; f/n PLV 15jun09; l/n KGO 07dec11; canx 27oct15
0022	UR-GOL	AK1-3	Kremenchug Fl.Schm	fd	12may08	Kremenchug Flying College of the National Aviation University (KLK NAU); rgd 19aug08; toc 02oct08; in silver c/s with 'KLK NAU' titles; f/n KHU 02oct08; severely damaged 29jan09 on a training flight at Kremenchug when the trainee tried to avoid a flock of birds at low altitude and speed but lost control, the helicopter banked to the right, crash-landed in this position and came to rest on its right side, both crew slightly injured; repaired; seen active Kremenchug 01jul10; current on register by 06nov14
0023	UR-UMSR	AK1-3	Alexander Holovach	mfd	10jun08	in silver c/s, no titles; rgd 15aug08; f/n Gostomel 25sep08; damaged 27sep10 on landing in front of the owner's house at Brovary, possibly due to ground resonance, the helicopter rolled over onto its right side and the tailboom broke off; t/t 210 hours by 27sep10; the owner renounced the helicopter; canx 04jan13
0024	UR-TOLA	AK1-3	no titles	PLV	30may09	in silver c/s; l/n Bolshoye Gryzlovo 12jun10; exported to Macber of Evere (Belgium) 11feb11
	F-PCRU	AK1-3	Dominique Crucifix	rgd	24oct16	Dominique Crucifix of Merville
	UR-RIBA	AK1-3	Anatoli V. Rybalko	no	reports	in silver c/s, no titles; w/o 04jul09 on a flight from Gozhuli when crashed in a field near Kuntsevo (Novosandzhar district of the Poltava region), caught fire and burnt out, pilot and passenger killed, the pilot did not have a licence
0026	RA-1492G	AK1-3	NARZ	e/d	24feb09	in black c/s, no titles; f/n Krasnodar-Belevtsy 04jun11; l/n Krasnodar-Belevtsy 26may12
0027	not known	AK1-3				
0028	no reg	AK1-3	SAFAT	DXB	13nov11	assembled by SAFAT; type painted on as both 'AK1-3' and 'SAFAT 02'; in silver c/s, no titles; l/n DXB 16nov11
0029	UR-ZANN	AK1-3	Aerokopter	mfd	22apr09	in black c/s, no titles; f/n PLV 09may09; l/n Gostomel 30oct10
	UR-ANNA	AK1-3	no titles	rgd	10jan11	in black c/s; f/n PLV 24sep11
	UR-ZNN	AK1-3	M.M. Zatulotsky	rgd	11sep13	canx between 04aug17 and 10aug17
0030	UR-SOUL	AK1-3	V.I. Ivanilov	mfd	27nov09	V.I. Ivanilov of Kotovsk; rgd 13mar10; CoFA expired 13mar11; returned by the owner to Aerokopter for modernisation 27oct11
	UR-XBH	AK1-3	V.I. Ivanilov	rgd	15apr13	canx 27oct15
	UR-IKV	AK1-3	V.I. Ivanilov	rgd	23dec16	V.I. Ivanilov of Podilsk
0031	F-WAKG	AK1-3	not known			assembled by Pierre-Francois Gerbaud
	F-PAKG	AK1-3	Foug'Air	ph.	30aug09	at Chateauroux-Villers; in blue c/s, no titles; l/n Pamiers-Les Pujols 14sep13
0032	UR-KLK	AK1-3	Kremenchug Fl.Sch.	mfd	22dec09	Kremenchug Flying College of the National Aviation University (KLK NAU); rgd 17feb10; damaged on a training flight 18jun10 when the instructor had the wrong impression that the engine had developed problems and opted for an autorotation landing on the Dniipro river near Kremenchug, both crew escaped with minor injuries, but the helicopter sank; t/t 261 hours by 18jun10; repaired; current on register by 06nov14
0033	F-PAKB	AK1-3	J.-C. Biondi	rgd	12may10	Jean-Claude Biondi Maughey; exported to Aero Systèmes de La Chapelle-Vendômoise (France) 24feb10, 25jun12 and again 25nov13
0034	not known	AK1-3				

0035	UR-HAU	AK1-3	Kremenchug Fl.Sch.	mfd	29dec09	Kremenchug Flying College of the National Aviation University (KLK NAU); rgd 15mar10; in yellow c/s with 'KLK NAU' titles; f/n KGO 28oct11; dbr 25jun13 on a training flight from Kremenchug when the engine failed while the helicopter was flying at a height of some 200 metres, the helicopter made an auto-rotation landing in a swamp near the "Azon" dacha co-operative at Bolshaya Kakhnovka, came down very hard and rolled over onto its left side, both pilots seriously injured; t/t 950 hours; canx between 04aug17 and 10aug17
0036	UR-SHAG UR-SHG	AK1-3 AK1-3	privately owned V.H. Shpak	mfd rgd	07dec09 29jul13	in silver c/s with 'Natali' titles; rgd 14jun10; f/n Gostomel 27sep12; current on register by 26apr13 V.H. Shpak of Rokytné; in silver c/s, no titles; f/n IEV 04oct13; current on register by 06nov14
0037	not known	AK1-3	not known			exported to Svarog of Krasnodar (Russia) 10aug10
0038	UR-ALYA UR-VAO UR-ALYA	AK1-3 AK1-3 AK1-3	privately owned A.O. Bendeberya A.O. Bendeberya	mfd rgd	2010 08nov13 jan15	probably owned by A.O. Bendeberya; rgd 06sep12; f/n Kharkiv-Korotysh 26oct13 A.O. Bendeberya of the Kharkiv region; current on register by 06nov14 on register still with the rgd date 06sep12; canx 27oct15
0039	not known	AK1-3	not known			kit exported to Modernizatsiya aviatsionnykh kompleksov of Troitsk (Moscow region of Russia) 29apr11
0040	not known	AK1-3	not known			kit exported to Metapol of Fujairah (UAE) 01jun11
0041	not known	AK1-3	not known			kit exported to Metapol of Fujairah (UAE) 01jun11
0042	not known	AK1-3	not known			kit exported to Metapol of Fujairah (UAE) 01jun11
0043	not known	AK1-3	not known			exported to Fantom (FZE) of Sharjah (UAE) 20jun12
0044	not known	AK1-3	not known			exported to Fantom (FZE) of Sharjah (UAE) 20jun12
0045	HLC055	AK1-3	not known	rgd	22feb11	kit exported to DB Korea of Gangseo-gu, Seoul (South Korea) 01feb11
0046	F-PAKF	AK1-3	Bernard Froideur	rgd	21jun11	kit exported to Aero Systèmes de La Chapelle-Vendôme (France) 14mar11
0047	not known	AK1-3	not known			exported to Fantom (FZE) of Sharjah (UAE) 20jun12
0048	not known	AK1-3	not known			exported to Top-Avia of Chisinau (Moldova) 16aug11
0049	F-PAKM	AK1-3	J.C. Biondi-Maugey	rgd	06jun12	Jean-Claude Biondi-Maugey; kit exported to Aero Systèmes de La Chapelle-Vendôme (France) 31jan12; based at Blois-Le Breuil, in black c/s, no titles; f/n 29jun12
0050	not known	AK1-3	not known			
0051	not known	AK1-3	not known			
0052	not known	AK1-3	not known			
0053	F-PSRE	AK1-3	Claude Suire	rgd	17sep12	kit exported to Wang Hai Long of Anshan (Liaoning province of China) 25dec12 exported to Aero Systèmes de La Chapelle-Vendôme (France) 07jun12; based at Jonzac-Neulles; in yellow c/s, no titles; f/n Jonzac-Neulles 21jun14
0054	not known	AK1-3	not known			kit exported to Wang Hai Long of Anshan (Liaoning province of China) 11oct12
0055	not known	AK1-3	not known			kit exported to Wang Hai Long of Anshan (Liaoning province of China) 11oct12
0056	not known	AK1-3	not known			exported to Uzmakhsus of Tashkent (Uzbekistan) 15feb12
0057	not known	AK1-3	not known			exported to Uzmakhsus of Tashkent (Uzbekistan) 15feb12
0058	not known	AK1-3	not known			in white c/s; was claimed by V.I. Ivanilov of Kotovsk in exchange for c/n 0030, but this was rejected by court orders dated 22may13 and 19sep13
0059	not known	AK1-3	not known			exported to Xiang Chen Hi-Tech Industrial Co. of Chenzhou (China) 15jan13
0060	not known	AK1-3	not known			exported to Xiang Chen Hi-Tech Industrial Co. of Chenzhou (China) 15jan13
0061	not known	AK1-3	not known			kit exported to Raymin Logistics of Hong Kong (China) 13mar13
0062	not known	AK1-3	not known			kit exported to Raymin Logistics of Hong Kong (China) 13mar13
0063	F-PAKI	AK1-3	Heli Flandres	rgd	02sep13	Heli Flandres Artois of Locon (Belgium); exported 22may13
0064	F-PTB	AK1-3	Raymond Legrand	rgd	05dec13	exported to Heli Flandres Artois of Locon (Belgium) 22may13; based at Cambrai-Niergnies
0065	F-PMAE	AK1-3	Benoît Maillard	rgd	09jan14	exported to Heli Flandres Artois of Locon (Belgium) 16jul13; based at Abbeville
0066	F-PAKZ	AK1-3	Jean-Pierre Fallis	rgd	31mar15	exported to Heli Flandres Artois of Locon (Belgium) 16jul13; based at Merville-Calonne; in black c/s, no titles; damaged 05jul15 on a flight from Mülheim an der Mosel (Germany) to Bitburg when took off from a meadow near a hotel next to the river Moselle, lost power shortly after and ditched into the river from a height of some 5-10 metres, both occupants jumped clear and swam to safety; the wreck was recovered from the river later the same day
0081	SP-YHA	AK1-3	ARGO.Aero	rgd	21aug17	to Celier Aviation Europe; seen under assembly with Argo at Wolica 14mar17; in white c/s with tiny titles; f/n Wolica 11may17; CofA issued 26may17 and seen flying the same day; f/n Wolica 11aug17
0086	SP-YHC	AK1-3	ARGO.Aero	rgd	05sep17	to Celier Aviation Europe; in yellow c/s with tiny titles; CofA issued 30aug17 and seen flying the same day
1001	C-GAKI	AK1-3	Scott Weinrich	mfd	2008	shipped from Odessa 29jul08 and arrived at Edmonton (Alberta) oct08; rgd 24apr09 to Weinrich Aviation Ltd. of Edmonton; canx 10nov15 as to the USA
	N132AK	AK1-3	Roy L. Upshaw	rgd	21oct16	Roy L Upshaw of Fort Worth, TX; already reserved 14dec15, but CofA issued only 02mar17; sold to Jack L. Pellett of Orange, CA in late 2017
---	UR-AKBB	AK1-3	no titles	PLV	18may09	in silver c/s; not on register 30jan12
---	RA-1601G	AK1-3	privately owned	rgd	26oct11	in register as A-131 YeEVS.07.0020; in all-white c/s, no titles; f/n Novinki 29apr12; l/n Perm-Frolovo jun14; no CofA by jun15
---	RA-1854G	AK1-3	privately owned	rgd	11sep12	in register as YeEVS.031979; CofA issued 04apr14; current by apr16
---	RA-1890G	AK1-3	A.I. Voronchenko	rgd	19nov12	in register as Kolibri YeEVS.03.2014; based at Romanovskaya; in white c/s with 'Kolibri' titles on the cockpit windows; f/n Romanovskaya 03may14; latest CofA issued 06apr15; l/n Potapov 09sep17
---	RA-2643G	AK1-3	privately owned	rgd	06may16	in register as YeEVS.03.3311
---	4L-...	AK1-3	Tbilisi Avn. Inst.	no	reports	assembled at Tbiliviamsheni probably in early 2008; dbr on its second test flight when landed so hard that the tailboom broke off and the helicopter came to rest on its side, both pilots injured
---	OO-...	AK1-3	Helivasion	ph.	jan07	in bordeaux red c/s, no titles; displayed during the Brussels Motor Show jan07; stored dismantled at Namur/Tempoux airfield since then but was seen performing test flights at Namur-Suarlee at an unknown date
---	ST-SAA	AK1-3	SAFAT	rgd	2015 ?	assembled by SAFAT; type painted on as 'SAFAT 02'; in silver c/s, no titles; f/n Bahrain-Sakhir 21jan16
---	ST-SAB	AK1-3	SAFAT	rgd	2015 ?	assembled by SAFAT
---	ST-SAC	AK1-3	SAFAT	rgd	2015 ?	assembled by SAFAT; type painted on as 'SAFAT 02' in Arabic; in white c/s; f/n DWC 08nov15; seen Waterkloof 14/16sep16 still with a 'Dubai Airshow 2015' sticker at the front of the cockpit
---	ST-SAD	AK1-3	SAFAT	rgd	2015 ?	assembled by SAFAT
---	ST-6TA-02F	AK1-3	SAFAT	Wtk	17sep16	assembled by SAFAT; type painted on as both 'AK1-3' and 'SAFAT 02'; in white c/s, no titles
---	no serial	AK1-3	Khartoum State Pol	h/o	10nov15 ?	assembled by SAFAT; type painted on as 'SAFAT 02'; in light blue c/s, no markings apart from the type (two identical ones on one photo)
---	no serial	AK1-3	Khartoum State Pol	h/o	10nov15 ?	assembled by SAFAT; type painted on as 'SAFAT 02'; in light blue c/s, no markings apart from the type (two identical ones on one photo)
---	not known	AK1-3	China	ph.	22mar15	probably not registered; in white c/s, no titles; damaged 20mar15 when overflew the Dongpu Reservoir at Hefei (Anhui Province) in poor visibility, descended steadily and crashed into the reservoir, the pilot was killed while the passenger was injured and managed to swim to an island; the hulk was recovered from the reservoir 22mar15
---	I-B197	MG-1	Egicopter	ph.	05jun10	at Ozzano Emilia; in white c/s without registration; initially without titles; f/n with titles Ozzano Emilia 18jun11, still without registration
---	RA-2398G	Orlan	privately owned	rgd	22jan15	in register as Orlan YeEVS.03.2784; in all-white c/s, no titles; f/n Ufa-Perushino 29jun17; l/n Severka jul17; current on register 23nov17

### Other Ukrainian light helicopter prototypes

KB "Vertikal" was founded as KB "Aviaimpex" in 1999. The company designed the KT-112 "Angel" light helicopter which was powered by a Rotax engine and had room for one pilot and three passengers. Top speed was 200 km/h and maximum range 800 km. The KT-112 flew first in 2004, and series-production was planned at a new factory at Borodyanka (the "Tyusse" factory which was never built). Unfortunately, KB "Vertikal" went bankrupt in 2010, and all activities of the company came to an end in 2015. Only two KT-112s were built, and just one of them seems to have flown.

01 01	UR-VRT	KT-112	KB "Vertikal"	mfd	apr04	prototype; in dark blue c/s with 'Ukrainian flag' trim, with titles; canx 10jan12
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Softex Aero is based at Brovary and owned by Iranian citizen Abbas Fasih Khoshgard. The company was founded in 2012 and developed two helicopter types, the small VV-2 and the larger V-51/V-52. Apart from that, Softex-Aero is producing the V-24 light aircraft. The VV-2 looks like a down-sized Bell AH-1 and is probably intended to be used as a training helicopter for Iranian AH-1 crews. It has a two-seat tandem cockpit and is powered by a 245 hp PBS Velká Bíteš TS100ZA turbo-shaft engine. Top speed is 240 km/h and MTOW 1,100 kg. The prototype flew first in September 2016 and was displayed at the Iran Air Show at Kish two months later. The V-51/V-52 has room for one pilot and 5 passengers and is to be powered by a 370 hp Rolls-Royce M250 turbo-shaft engine. Top speed is said to be 320 km/h and MTOW 1,450 kg. Only a mock-up has been built by 2017.

16-04-01	UR-EXG	VV-2	Softex Aero	mfd	2016	rgd 09sep16 to Softex-Invest of Brovary; in greyish blue c/s, no titles; f/f sep16 (14sep16 ?); displayed at the Iran Air Show at Kish 16/19nov16; current on register nov17
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## AeroVolga L-6 & LA-8

The small private company AeroVolga was founded in 2002. Development of the six-place flying boat L-6 had already started in 1999, and the L-6 "Flagman" prototype made its first flight on 9 July 2000. The next step was the amphibious version L-6M which was powered by two AvtoVAZ RPD-416 Wankel engines (as opposed to the weaker RPD-413 engines of the prototype) and flew first in 2001. The designer of AeroVolga, Alexei Annenkov, left the company for Chaika in 2001, and the rights on the L-6 were transferred to Chaika as well. This company developed an improved version, the amphibian L-6SV which flew first in 2004. However, only one example of the L-6SV had been built by 2011, while Chaika turned to the development of a smaller copy of the L-6, the L-4 (or L-42/L-44).

AeroVolga then concentrated on the development of the LA-8, an amphibian with 8 seats. The LA-8 is powered either by two LOM Praha M-337C engines (LA-8C) or by two Lycoming O-540 B4B5 engines (LA-8L). The type was first presented to the public during the MAKS-2005 air show. It can also be used for patrol and ambulance flights. The aircraft is not actually cheap, it comes with a price tag of \$ 1 million. There are plans to build a version with extended range, the LA-8D, which is intended to be used for a round-the-world flight.

Two LA-8s were sent to Iran for evaluation in 2012, one of them was damaged on the ferry flight while the other one successfully flew to the Persian Gulf and was tested there. It entered service with Iranian RGC Naval Aviation eventually, together with three other LA-8Cs which were delivered probably in summer 2014 and officially taken on charge on 13 December 2017. Their serials are probably SN-3201 to SN-3204.

## 2 L-6 built by AeroVolga at Samara-Chaika in 2000 and 2001

001	? no reg	L-6	AeroVolga	f/f	09jul00	"Flagman" prototype of the flying boat version; powered by AvtoVAZ RPD-413 Wankel engines; in all-white c/s, no markings whatsoever
	FLARF02737	L-6	AeroVolga	GDZ	sep02	c/n not confirmed; in all-white c/s with titles; registration painted on as 'FLA RF-02737'; preserved as a gate guard with AeroVolga at Krasny Yar, seen nov12/may15
002	FLARF01902	L-6M	AeroVolga	mfd	21jun01	prototype of the amphibious version; powered by RPD-416 engines; in all-white c/s with small titles, c/n painted on fin and registration painted on as 'FLA RF 01902'; f/f 21jun01
	RA-1007G	L-6M	Novosibirski KLA	rgd	30jul08	in register as YeEVS.02.069; current on register 23nov17

## 1 L-6 built by Chaika at Samara in 2004

---	RA-3289K	L-6SV	Chaika	mfd	01oct03	amphibian; powered by RPD-416 engines; in all-white c/s, no titles; underwent trials with SibNIA from nov04
	RA-1006G	L-6SV	Aviapetsnabkont.	rgd	30jul08	Aviapetsnabkontol; in register as YeEVS.02.097; current on register 23nov17

## Some 20 LA-8 built by AeroVolga at Krasny Yar (near Samara) from 2004

The first 10 aircraft had sequential numbers, while starting with the 11th aircraft a system consisting of batch number and number in the batch was used.

001	RA-0344G(1)	LA-8	AeroVolga	f/f	20nov04	prototype; in register as YeEVS.02.0078; powered by LOM Praha M-337A engines; rgd 11aug05; in all-white c/s with small 'www.aerovolga.com' titles; registration painted on as 'RA 0344 G'; f/n ZIA 17aug05; l/n ZIA 20aug05; on an early photo with additional 'Isptaniya' (Trials) titles; see c/n 009
	RA-0344G(1)	LA-8C	AeroVolga	f/f	aug06	re-engined with M-337C engines jun06; version on register as LA-8C-RS, but that is probably not correct; in all-white c/s with small 'www.aerovolga.com' titles; f/n GDZ sep06; seen Sterlitamak-Salavat 10jul09; new CofR issued 21apr15; seen Krasny Yar 25jun16; l/n Novosibirsk-Mochishche 28jun16; current on register 23nov17
002	RA-0778G(1)	LA-8C	AeroVolga	mfd	01jul07	in register as YeEVS.02.0244; powered by LOM Praha M-337C engines; construction started jan06; rgd 16aug07; initially in white c/s with red belly, with small 'www.aerovolga.com' titles; f/n ZIA 20aug07; l/n as such GDZ 06sep08; returned to the factory for maintenance and service bulletins jan10; repainted in silver c/s with 'wavy' medium and dark blue trim; f/n as such Krasny Yar 22apr10, without registration but flying; l/n as such Pribrezhnoye 27jun10; seen PES 05aug10 again with registration; named 'Mikhail Yemanov' after a late test pilot of AeroVolga; f/n as such GDZ 08sep10; l/n Krasny Yar 30may11; probably procured via Rimass by the Iranian Aviation Industries Organization (IAIO) in secret to be tested and evaluated in Iran, ferried from Bandar Anzali to Rasht 29jul12; still current on register 23nov17, but the identity of the aircraft on the register was probably taken over by RA-0778G (2) c/n 201, see there
	3202	LA-8C	Iranian RGC Navy	ph.	13dec17	c/n not confirmed, but was in exactly the same c/s as RA-0778G (1); the full serial should be SN-3202; based at Bandar Abbas-Havadarya; in silver c/s with 'wavy' medium and dark blue trim, no markings apart from serial; officially toc 13dec17
003	--	LA-8				construction started apr07; was to be based in the Moscow region
004	RA-0757G(1)	LA-8L	AeroVolga	mfd	03mar10	powered by Lycoming O-540 B4B5 engines; construction started jun07, the wings underwent static trials 28dec09; in white c/s with light brown trim, with small 'www.aerovolga.com' titles; registration painted on as 'RA 0757 G'; l/n Chistoozyorsk 08aug10; see c/n 006
	RA G	LA-8L	AeroVolga	GDZ	09sep10	in white c/s with light brown trim, with small 'www.aerovolga.com' titles; incomplete registration painted on as such
	RA-1279G	LA-8L	Sergei V. Alafinov	rgd	24may10	Sergei Alafinov was the director of AeroVolga; in white c/s with light brown trim, with small 'www.aerovolga.com' titles; registration painted on as 'RA 1279 G'; f/n WRO 09apr11; l/n Sterlitamak-Salavat 11jun11; canx before aug12
	no reg	LA-8L	Rimas	d/d	jul12	c/n not confirmed; registration reported as RA-0755G; procured via Rimass by the Iranian Aviation Industries Organization (IAIO) in secret to be tested and evaluated in Iran, with a view to produce the type under licence by Iranian Aircraft Manufacturing Industries (IAMI) at Shahin-Shahr; in white c/s with brown trim, no titles; damaged 29jul12 on a flight from Bandar Anzali (Gilan province in northern Iran) to Rasht with 2 pilots who did not have a licence to fly amphibian aircraft at the controls when took off from water at the "Qods Boulevard" coastal park, starting the take-off run too close to the embankment, the left wing hit rocks on the embankment and the wing tip broke off, the aircraft was turned around and the bottom of the fuselage was ripped by rocks on the sea floor, all 3 occupants injured; repaired and taken over by the Iranian RGC Navy, but not put into service
005	--	LA-8				construction started in 2007
006	RA-0757G(2)	LA-8L	AeroVolga	mfd	07apr09	in register as YeEVS.02.0443; powered by Lycoming O-540 B4B5 engines; construction started apr08; in white c/s with blue and red trim, with small 'www.aerovolga.com' titles; rgd 07may09; f/f nov09; received its first CofA feb10; f/n Krasny Yar 03may10; l/n Bolshoye Gryzlovo 29apr12; new CofR issued 09aug12; current on register 23nov17; see c/n 004
007	--	LA-8	--			construction started in 2009 and final assembly feb10; was to be completed 15may10
008	--	LA-8	--			mentioned in a service bulletin 26may14; probably the aircraft seen in white c/s with dark green trim without markings at Krasny Yar 29may14 (but could have been c/n 007) and delivered via Rimass to Iran in summer 2014
	no serial ?	LA-8C	Iranian RGC Navy	ph.	13dec17	c/n not confirmed (could be 007); based at Bandar Abbas-Havadarya; in white c/s with dark green trim; officially toc 13dec17
009	no reg	LA-8C	AeroVolga	f/f	09nov13	in white c/s with dark blue trim, with small 'www.aerovolga.com' titles; h/o (on paper) 12dec13
	RA-0344G(2)	LA-8C	AeroVolga	ph.	29may14	c/n not confirmed; fake registration, seen c/n 001; in white c/s with dark blue trim, with small 'www.aerovolga.com' titles; seen Krasny Yar 29may14; probably delivered via Rimass to Iran in summer 2014
	no serial ?	LA-8C	Iranian RGC Navy	ph.	13dec17	c/n not confirmed; based at Bandar Abbas-Havadarya; in white c/s with dark blue trim; officially toc 13dec17
010	no reg	LA-8C	AeroVolga	ph.	27feb14	in white c/s with orange trim, no titles; f/f probably 01mar14; l/n Krasny Yar 29may14; probably delivered via Rimass to Iran in summer 2014
	no serial	LA-8C	Iranian RGC Navy	ph.	13dec17	c/n not confirmed; based at Bandar Abbas-Havadarya; in white c/s with orange trim, no markings visible on photo; officially toc 13dec17
01 11	not known	LA-8C	not known			was to be h/o dec15
01 12	not known	LA-8C	not known	h/o	feb17	seen on the assembly line may16
01 13	--	LA-8				under construction may16
01 14	--	LA-8				under construction may16
01 15	not known	LA-8C	not known	f/f	17dec15	h/o was planned for jan16
01 19	--	LA-8				mentioned in a service bulletin 24nov16
02 01	RA-0778G(2)	LA-8C-RS	AeroVolga	f/f	07jun14	construction started 08oct12; seen on the assembly line 02jun14; initially in beige c/s with small 'www.aerovolga.com' titles and a multitude of stickers; l/n as such Ufa-Pervushino 27jun14; repainted in white c/s with small 'www.aerovolga.com' titles and 'VTB' advertising; f/n as such FDH 23apr16, c/n checked on plate as '201'; l/n Severka 10sep16; on the Russian register in 2016/17 RA-0778G was still given as YeEVS02.0244 with the rgd 16aug07, so c/n 0201 probably took over the official identity of c/n 002 which was delivered to Iran, see there
02 02	--	LA-8C-RS				construction started 09dec13, completed around dec15
---	--	LA-8G	not known	ph.	01mar12	on the assembly line; powered by LOM Praha M-337 engines; in all-white c/s; l/n in the factory 29mar12
---	--	LA-8H	not known	h/o	04nov12	flying boat version without landing gear
---	--	LA-8C-R	not known	h/o	28nov15	

# Ekranoplans - WIG craft

'Ekranoplan' is the Russian term for wing-in-ground-effect craft (WIG craft). These vehicles make use of the dynamic air cushion generated when flying at close proximity to the water (or another flat and even surface). Thus, additional lift is generated enabling a WIG craft to obtain the same lift as an aircraft at lower speeds and lower engine power.

Some WIG craft are closer to aircraft and some closer to ships. Three categories have been set up by the IMO (International Maritime Organisation) together with the ICAO, based on proposals by Russian organisations: Type A vehicles can operate only within the ground effect and are close to hovercraft. Type B vehicles can leave the ground effect for a short while and make brief hops, while Type C vehicles can fly outside the ground effect zone for a considerable time and climb to altitudes in excess of the minimum safe flight altitude for aircraft as prescribed by ICAO regulations. Although all the basic Soviet designs described here are Type B craft, the Soviet military-industrial complex did not consider them flying machines in the beginning. This had negative consequences for their future career.

The Soviet Union was for decades the world's leading nation in WIG craft design and construction. The vast majority of Soviet WIG craft were designed by the bureau headed by Rostislav Alekseyev and built by the 'opytny zavod "Volga" TsKB po SPK' (prototype factory "Volga" of Alekseyev's Central Design Bureau for Hydrofoils) in Chkalovski near Gorki/Nizhni Novgorod. First design studies started in 1960, and within the next 30 years, more than a dozen different WIG craft were built by Alekseyev. However, they all remained prototypes, and only one design reached the pre-production stage. We will not deal here with those craft which were just small experimental vehicles (mostly of Type A). This leaves only the KM, the "Orlyonok", the "Lun", the "Strizh", the VVA-14 and the "Ivolga".

## **Alekseyev KM: 1 technology demonstrator built by Zavod "Volga" between 1963 and 1966**

The Alekseyev KM (Russian abbreviation for 'mock-up ship' or rather 'prototype ship') which was dubbed 'Caspian Monster' in the West was the largest ever built WIG craft, and until the appearance of the An-225 also the world's largest flying machine.

Design started in 1963, and the first flight took place on 18 October 1966. This giant machine was powered by ten Dobrynin VD-7 turbojets, two of them being located on the fin serving as cruise engines and eight as booster engines on the forward fuselage sides. Although only one KM was built, there are many photos showing it with different tail numbers ("01" to "08").

These numbers indicate the different test phases, some of the changes to the craft were quite substantial, like wing span (32-40 m) and length (92-106 m) variations. The maximum weight varied from 495 to 544 tonnes (at that time twice the heaviest aircraft).

---	"01" white	KM	TsKB po SPK			construction started 1963, set afloat mar66; f/f 18oct66
	"04" white	KM	TsKB po SPK	photo		
	"07" white	KM	TsKB po SPK	photo		
	"08" white	KM	TsKB po SPK	photo		cruise engines relocated from the fin to a pylon above the flight deck in 1979; dbr dec80 during take-off due to pilot error and sank, was to be recovered but broke during lift operations

## **Alekseyev A-90 "Orlyonok": 2 prototypes and 3 pre-production craft built by Zavod "Volga" 1970-1983**

The Alekseyev A-90 "Orlyonok" (means 'Eaglet' in Russian) was a troop-carrier/assault WIG craft built to a specification issued by the Soviet Navy. The craft was to carry two tanks and a battalion of naval infantry. Development of the "project 904" started in the late 1960s, and the first prototype was set afloat at the "Krasnoye Sormovo" factory in Gorki (now Nizhni Novgorod) in autumn 1973. It underwent 'sea' trials at first on the river Volga and later on the Caspian Sea. A batch of 3 pre-production craft was built, and there were plans for the construction of about 30 of them at the "Krasnoye Sormovo" factory (reports that up to 120 "Orlyonoks" were to be built are greatly exaggerated). However, after the death of Soviet Defence Minister Ustinov in 1985, the programme lost priority, and further construction was eventually stopped. So plans to equip the Baltic Fleet with a WIG craft unit failed to materialise.

The "Orlyonok" was powered by one Kuznetsov NK-12MK cruise engine on top of the vertical stabilizer, and two Kuznetsov NK-8-4K engines in the nose provided additional lift during take-off and watering. It should have been able to fly at heights of up to 1500 metres like a normal aircraft although this was never tried out. The "project 904" was officially commissioned by the Soviet MoD on 12 October 1984, and the 3 pre-production craft equipped the 236th squadron of WIG assault craft of the Caspian Flotilla, which was renamed the 11th Aviation Group of the Black Sea Fleet on 21 April 1987. As the "Orlyonoks" were not considered aircraft, they did not wear Red Stars, but the Soviet Navy flag on the fin.

The last of the "Orlyonoks" was withdrawn from use in October 1993 as after ten years in service they would have needed rework - which could not be provided in the turmoil after the downfall of the Soviet Union. The type was officially decommissioned in 1998 on account of its alleged unsuitability for repairs and refurbishment. The remaining two "Orlyonoks" are still stored at Kaspisk awaiting better times. In summer 2002, there were rumours that an "Orlyonok" was to be used during a military exercise on the Caspian Sea. However, there must be serious doubts that an "Orlyonok" will ever fly again.

Dubl	no code	Orlyonok	TsKB po SPK			static test frame; scrapped
S-21	no code	Orlyonok	TsKB po SPK	no	reports	designation MDE-150; first pre-production craft; transported to Kaspisk aug77, underwent trials there in 1977/79; mfd given as 20oct79
	"610" white	Orlyonok	Soviet Navy	toc	03nov79	photo exists; reached an altitude of some 300 metres in trials secretly undertaken by the crew around 1983/85
	"21" white	Orlyonok	Soviet Navy	ph.	1992	w/o 28aug92 (or 12sep92) when left the ground effect due to pilot error 6 minutes after take-off and crashed into the Caspian Sea, 1 crew member killed; remains were blown up; t/t 279 hours 35 min and 140 cycles
S-23	no code	Orlyonok	TsKB po SPK	mfd	1973	first prototype; sported a civilian white/blue c/s, but received a Soviet Navy flag on the fin later on; construction started nov70, set afloat at "Krasnoye Sormovo" in autumn 1973, underwent 'sea' trials on the river Volga oct73, modified in winter 1973/74, dismantled and transported to Kaspisk in summer 1974; dbr 1975 when the aft fuselage broke off while touching down in rough seas; scrapped
S-25	"630" white	Orlyonok	Soviet Navy	toc	27oct81	designation MDE-155
	"25" white	Orlyonok	Soviet Navy	photo		wfu 1991; sat wfu at Kaspisk; scrapped in 1999 or 2000
S-26	"650" white	Orlyonok	Soviet Navy	toc	30dec83	designation MDE-160; code also given as "655" white, but probably in error
	"26" white	Orlyonok	Soviet Navy	photo		at Kaspisk
	"26" white	Orlyonok	Russian Navy	trf	1992	wfu oct93; seen wfu at Kaspisk may06; towed from Kaspisk to Moscow-Severnoye Tushino via the river Volga 01/26jun07; preserved in the Russian Navy museum on the Khimki reservoir from 29jul07, repainted in light grey c/s with blue cheatline and fin, without code, l/n jun16

## **Alekseyev "Lun": 2 prototypes built by Zavod "Volga" between 1983 and 1992**

The Alekseyev "Lun" (means 'Harrier' in Russian) was a combat WIG craft powered by eight Kuznetsov NK-87 turbofans and armed with six 3M80 "Moskit" anti-shiping missiles. It was able to fly at heights of up to 7500 metres and would have posed a serious threat to Western shipping. Development of the "project 903" started in 1970, and the first prototype was completed in 1986. When the trials of the first prototype were completed, the Soviet Union collapsed, and there was no further funding available. So it was decided to convert the second prototype into an SAR craft called "Spasatel" (means 'Rescuer' in Russian) or "project 9037".

Again, funding was insufficient, and the "Spasatel" was still not completed by 2003. If it had been fielded in time it could have been of great use during the "Kursk" disaster as it is also able to carry a deep-sea rescue vehicle...

S-31	no code	Lun	Soviet Navy	mfd	1986	first prototype; construction started in 1983; set afloat 16jul86, transported to Kaspisk where it was completed and underwent sea trials in spring 1987, factory trials jun89 and state trials dec89; commissioned dec89; based at Kaspisk; wfu 1991 and reportedly officially decommissioned 2003; seen wfu in a dry dock at Kaspisk (N42.881833 E47.656577) nov09
S-33	no code	Lun	TsKB po SPK	no	reports	second prototype; construction started in 1986, but was stopped in 1991 when was 75 % complete; converted to an SAR version while under construction
	no code	Spasatel	TsKB po SPK	photo		was to be handed over to the Russian Navy's Baltic Fleet, but was never completed; fuselage removed from the shipbuilding shed of the "Volga" factory 11aug16 and transported for storage to the "Krasnoye Sormovo" factory

## **Alekseyev "Strizh": 1 prototype built by Zavod "Volga" in 1991**

The Alekseyev "Strizh" (means 'Swift' in Russian) was developed to provide training capabilities for "Orlyonok" and "Lun" pilots of the Soviet Navy. Development of the "project 19500" started in 1990, and the first prototype was completed in 1991. The two-seat trainer which is powered by two VAZ-4133 wankel engines can also be used for patrolling, liaison and business flying. Only one of the planned three craft was built as the Soviet Navy cancelled the order for its two "Strizh" trainers.

S-11	no code	Strizh	AO TsKB SPK	photo		first prototype; mfd 1991; flew beneath four bridges over the river Moskva in Moscow 05oct94
	no code	Strizh	JSC Alexeyev	photo		

## **Bartini VVA-14: 2 prototypes built jointly by TMZ (Factory # 49) and Factory # 86 at Taganrog-Yuzhny**

Another Soviet designer active in the development of WIG craft was Italian-born Robert Bartini. In 1965, he started to develop the VVA-14 (stands for 'VTOL amphibian with 14 engines'), an ASW aircraft which should be capable of movement in ground effect to achieve larger range and lower detectability. As Bartini did not have a production facility of his own he co-operated with Beriev's TMZ at Taganrog. The VVA-14 was to be powered by two Solovoyov D-30M turbofan cruise engines and twelve Kolesov RD-36-35PR lift engines, the latter were, however, never installed as their development lagged far behind schedule. So trials had to start without them, and in 1973 Bartini decided to install instead two additional D-30M booster engines flanking the forward fuselage.

Thus the VVA-14 was converted into a Type C ekranoplan, and as the craft lost its VTOL capabilities the letters 'VVA' were dropped from its designation and it was renamed 14M1P.

1M	CCCP-19172	VVA-14	Beriev, AFL c/s	mfd	jul72	f/f 04sep72 from Taganrog-Tsentralny military airfield; equipped with large inflatable rubber floats in early 1974; t/t 103 hours, 107 cycles until completion of the trials 27jun75; converted in 1975/76 to, see next line
	CCCP-19172	14M1P	Beriev, AFL c/s			tested in 1976 but turned out to be unable to get airborne, so wfu and used as a floating laboratory
	CCCP-10687	14M1P	Beriev, AFL c/s			partially destroyed at Lytkaryino during its transportation to Monino in 1987; remains stored in the Russian Air Force museum at Monino with this fake registration, l/n jan17
2M	--	VVA-14	Beriev Des. Bur.			for VTOL tests; the airframe was basically completed when construction was stopped in 1975; hulk sat on the territory of TANTK im. Berieva at Taganrog-Yuzhny, photo in the early 1990s

## **EL-7 & EK-12 "Ivolga"**

The only Russian Type B WIG craft in production today is the Kometel EK-12 "Ivolga 2" respectively its derivatives "Orion-14" and CYG-11. The "Ivolga" (means 'oriole' or 'hangbird' in Russian) can carry 7 to 12 passengers or up to 1.1 tonnes of cargo, depending on the version. It was to be certified in the Riverine Register with a limitation of the altitude of flight outside the ground effect. Certification in the Aviation Register would also be possible if the craft was equipped with aircraft engines, avionics and navigation systems.

The "Ivolga" was developed by the design bureau Kometel. For the purpose of production and operation, the consortium TREK (stands for 'transport ekologicheskii', environment-friendly transport) was founded by the design bureau, the launch customer and several other organisations. Development took more than ten years as it was hampered by the economic crisis after the break-up of the Soviet Union. It was only in 1995 when the designer of the "Ivolga", Vyacheslav Kolganov, succeeded in getting

sufficient funding. The first prototype EL-7 "Ivolga" was built by TsNII "Kometa" in Moscow in 1997 and completed and tested at the Khlebnikovo Ship Repair Yard on the Klyazma water reservoir in 1998. The first flight took place on 20 February 1999 on the Irkutsk water reservoir near Molodyozhny.

The EL-7 was powered by two Russian ZMZ-4062.10 engines as fitted to the GAZ-3110 "Volga" saloon car. As they turned out to be too weak, they were soon replaced with two BMW S38 (315) engines from the BMW 540i saloon, and the craft was redesignated EL-7S in this configuration. The later EK-12 received Chevrolet LS3 engines, while planned versions with BMW M70, ZMZ-4064.10 and ZMZ-4082.10 engines failed to materialise.

The "Ivolga 2" can be used for passenger and cargo transport, SAR, medevac and various patrolling duties. It can fly at heights of up to 15 metres. The craft can be airlifted by an Il-76 for SAR missions at a large distance from its base.

The programme was supported by the launch customer Upper Lena River Shipping Company (VLRP) which ordered 25 EK-12s for use on the river Lena in Eastern Siberia. The Ob'-Irtysk and Omsk Shipping Companies placed options for another 32 "Ivolgas", and ten EK-12s were reported to have been ordered by a Brazilian company. As it seems, not a single one of those orders ever materialised. Series-production was planned at the "Polyot" factory at Omsk as well as the Khlebnikovo Ship Repair Yard, but nothing came of this. The designer of the "Ivolga", Vyacheslav Kolganov, moved to China around 2010 and started to work for the Hainan England WIG Manufacturing Company (Yingge) at Haikou, where he developed a modified version of the EK-12, the CYG-11. And one EK-12P was handed over to "Orion" at Petrozavodsk in May 2010, serving as a benchmark for the design of the "Orion-12" and "Orion-14". Thus the legacy of the "Ivolga" was retained.

### **EL-7 "Ivolga": 1 prototype built by TsNII "Kometa" in Moscow in 1997**

---	no reg	EL-7	TREK, no titles	mfd	late 97	first prototype, powered by ZMZ-4062.10 engines; water handling trials started on the river Moskva at Nagatino near Moscow aug98, reportedly made a first 'hop' 16oct98; airlifted to Irkutsk by an Il-76; f/f in air injection mode (on static air cushion) 16feb99 on the Irkutsk water reservoir near Molodyozhny; first flight in ground effect 20feb99 at the same location; still unpainted at that time; converted in mid-1999 to, see next line
	no reg no reg	EL-7S EL-7S	TREK, no titles VLRP	f/f ZIA	aug99 aug01	re-fitted with BMW S38 engines; first long-distance flight feb00 Upper Lena River Shipping Company; in white/orange c/s with titles

### **EK-12 "Ivolga 2" production WIG craft built in Moscow (by the Khlebnikovo Ship Repair Yard ?)**

About ten EK-12s were reported as having been built by August 2007, but probably in reality the number was much lower.

---	"001" black	EK-12P	FSB	ZIA	24aug07	c/n 01 ?; in white c/s with blue undersides and red propeller ducts, with "Pogranichnaya Sluzhba FSB RF" titles; underwent trials on lake Ladoga and on the Caspian Sea in 2007/08; declared unfit for regular service oct08; displayed at the 'Interpolltex-2008' exhibition in Moscow 28/31oct08; flown in a cargo plane from Kaliningrad to Petrozavodsk may10 and h/o to "Orion", serving as a benchmark for the design of the "Orion-12" and "Orion-14"; stored with "Orion" at the former "Avangard" shipyard at Petrozavodsk, l/n may15
---	"03" blue 04 no code	EK-12 EK-12	no titles no titles	GDZ ZIA	04sep12 28aug13	c/n 03 ?; in natural metal c/s in natural metal c/s with yellow floats; delivered to South East Asia

### **"Orion" WIG craft built by "Orion" at the former "Avangard" shipyard at Petrozavodsk**

The "Orion" company at Petrozavodsk plans to build a series of WIG craft of different sizes, from the "Orion-12" for 12 passengers to the "Orion-20" for 20 passengers. The "Orion-12" and its improved version "Orion-14" are based on the EK-12 "Ivolga 2", an example of which was shipped to Petrozavodsk and handed over to "Orion" in May 2010 after having been evaluated by the FSB. These two models have an MTOW of 4,200 kg, can reach a top speed of 220 km/h and have a range of up to 900 km. The only known customer is Iran which ordered a total of six - two "Orion-12P" were delivered in 2013, followed by one "Orion-14" in 2016. They were procured for Iranian RGC Naval Aviation and seem to operate from Bandar Abbas naval air station. Probably Iranian Aircraft Manufacturing Industries (IAM) at Shahin-Shahr intends to produce the type under licence. The "Orion-20" was built by using a cockpit of a Yak-40. It has an MTOW of 10 tonnes, can reach a top speed 220 km/h in WIG mode and 250 km/h in aircraft mode and has a range of 1,300-1,600 km. The accident on 30 July 2015 delayed the project, but work proceeded in 2017.

---	not known	Orion-12P	Iranian RGC Navy	d/d	2013	based on the Caspian Sea, probably at Bandar Abbas; modernised in line with Iranian requirements in late 2015 (probably in Iran)
---	not known	Orion-12P	Iranian RGC Navy	d/d	2013	based on the Caspian Sea, probably at Bandar Abbas; modernised in line with Iranian requirements in late 2015 (probably in Iran)
---	no reg	Orion-14	Orion	ph.	04sep14	the first prototype of this version of the Orion-12 with improved aerodynamic characteristics; powered by two unknown boat engines; in white c/s with blue float sides, no titles, type painted on as 'Orion-14'; presented at the "Gidroaviasalon-2014" at Gelendzik 04/07sep14; started trials on the ice of lake Onega 24feb15; l/n Petrozavodsk may15
---	no reg	Orion-14	Orion	ph.	18feb16	in white c/s, no markings whatsoever; presented during the "Russki lyod" conference of MChS Rossii at Vytegra 18/19feb16 (flew from Petrozavodsk to Vytegra over lake Onega, covering 128 km in 39 minutes); disassembled and transported by truck from Petrozavodsk to Astrakhan and transported by ship to Iran in 2016
---	not known no reg	Orion-14 Orion-20	Iranian RGC Navy Orion	d/d r/o	2016 16aug13	based on the Caspian Sea, probably at Bandar Abbas the first prototype, construction started at the "Volga" factory at Nizhni Novgorod sep10 and continued at Petrozavodsk dec11; initially powered by two TVD-10 engines; later received a third engine on top of the rear fuselage; initially in white c/s with blue belly, ochre nose, floats and tail, no titles, type painted on as 'Orion-20'; underwent sea trials on lake Onega aug13; f/f mar14 on lake Onega; l/n in its old c/s mar14; repainted in white c/s with blue belly and red floats, no titles; named 'Yuri Chirkin' after an ekranoplan test pilot who died in 2014; f/n as such Petrozavodsk oct14; started trials on the ice of lake Onega 24feb15; severely damaged 30jul15 on a test flight on Petrozavodsk bay of lake Onega near the "Avangard" shipyard when left the ground effect, increased the angle of attack to almost 90 degrees, stalled and fell back into the water, all 4 crew injured; hulk rebuilt by "Orion", now powered by two 1.200 hp engines; in white c/s with blue belly and red floats, no titles, type now painted on as just 'Orion'; started trials on the ice of lake Onega mar17

### **Chinese WIG craft**

There is another Eastern nation active in the development of WIG craft - China. As in the Soviet Union, these vehicles ('Dixiaofeiji' in Chinese) were shrouded in secrecy for a long time; only around the turn of the century it has become possible to find some information on them. One of the Chinese companies working on WIG craft was Flying Dragon Technology, a joint venture between Hong Kong, China and Russia founded in 2000. Its participants were the Central Design Bureau for Hydrofoils (TsKB po SPK) from Chkalovski and several shipbuilding companies from Shanghai. The ekranoplans marketed by Flying Dragon Technology were all developed by the Russian design bureau; as so often in the history of the Chinese aerospace industry, its products were based on Soviet technology... One of the company's projects was the 150 passenger FLHRO-PB which was derived from the "Orlyonok" and was sometimes also referred to as the "Orlyonok II". However, Flying Dragon Technology has not yet built a single WIG craft.

More progress has been made by another organisation, the China Academy of Science and Technological Development (CASTD). This Guangzhou-based academy was founded in August 1995 and was funded by the Chinese government. Their first WIG programme was the Tianyi 1, or short TY-1. The first craft built was powered by two Lycoming IO-450-K1B5 engines which may be replaced by Chinese HS-6K piston engines in later examples. Development started at the CASTD in June 1996, and the first TY-1 was completed by the "Huntu" aircraft factory at Jinmeng (Hubei Province) in August 1997. As the programme has been aimed at commercial operation from the very beginning, there was no full-scale prototype, with the first craft built being put into commercial operation after a 10 month test programme. The TY-1 flew first on 10 November 1998 and started touristic "flights" on Taihu Lake from Huzhou (Zhejiang Province) in 1999, being the world's only commercially operated WIG craft at that time. Although the TY-1 was designed to carry 15 passengers it is currently taking aboard no more than 11 due to a weight problem. The second craft suffers from the same problem and was to be completed by May 2000. From the third craft on the weight problem was to be solved, however. Unfortunately, the current status of the programme is not known.

The designer of the Russian "Ivolga" ekranoplan, Vyacheslav Kolganov, moved to China around 2010 and started to work for the Hainan England WIG Manufacturing Company (Yingge) at Haikou, where he developed the CYG-11 which is based on the EK-12. The CYG-11 is powered by Chevrolet LS3 engines, can reach a top speed of 220 km/h and boasts a maximum range of 1,500 km. Trials started at Haikou in March 2013 and were completed in April 2015.

### **Tianxiang TY-1: 2 built by "Huntu" aircraft factory at Jinmeng from 1997**

---	no serial	TY-1	CASTD, no titles	mfd	aug97	f/f 10nov98; underwent a 10 month test programme; in white c/s with red undersides and blue cheatline, CASTD badge on fin
		TY-1	not known			in the same c/s as above, with unknown Chinese titles; started commercial operation on Taihu Lake (Zhejiang Province) in 1999
---	--	TY-1				was to be completed by may00

### **CYG-11 built by the Hainan England WIG Manufacturing Company (Yingge) at Haikou from 2013**

001 ?	no serial 001	CYG-11 CYG-11	Yingge Yingge	ph.	29mar13 30jun13	at Haikou; in light grey c/s with blue undersides and red propeller ducts, no titles; l/n Haikou 02apr13 at Haikou; in light grey c/s with blue undersides and red propeller ducts, unknown Chinese titles; l/n Haikou 21mar16
002 ?	002	CYG-11	Yingge	ph.	12jul14	at Haikou; in light grey c/s with blue undersides and red propeller ducts, unknown Chinese titles; l/n Haikou 16apr15

# Filimonov "Bella"

## 1 'Bella' demonstrator built by the shipyard (Sudostroitelny zavod) at Tyumen in 1994

---	09	Bella	TyumenEkotrans	r/o	nov94	in white/grey c/s with blue-red cheatline, with additional 'Sudostroitelny zavod' titles on the left side, 'Aviaremzavod-26', 'Sibnefteprovod' and 'MAI' titles on the right side; completed first stage of flight tests mar96; wfu 1996 and stored
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# FWD 152

Although strictly speaking not a Soviet transport, the history of the 152 is closely related with the Soviet Union. This first German jetliner (which was to carry 48 to 73 passengers) was designed by a team headed by Brunolf Baade and Fritz Freytag and built by VEB Flugzeugwerke Dresden (Dresden Aircraft Factory, also known as Factory # 803).

Baade and Freytag had worked with Junkers in Dessau and were forcefully relocated to Podberyozye (north of Moscow) in October 1946. There, and later at Kimry, Baade headed OKB-1 together with Semyon Alekseyev and designed several bombers. The last of these, "Samolyot 150" (Aircraft 150), served as the basis for the design of a small jetliner first called "Samolyot 15.2". When Baade returned to East Germany in June 1954, he became chief designer of the Dresden Aircraft Factory (FWD).

Development of the 152 started at Savyolovo in December 1953, underwent several design changes and was completed at Dresden by spring 1957. Manufacturing of parts started in early 1957, and the main full-scale mock-up was completed on 26 March and approved on 25 April 1957. The first flight of the first prototype took place on 4 December 1958, but it crashed on its second flight on 4 March 1959. Whereas the first prototype V1 was still equipped with four Soviet Mikulin RD-9B engines, the second prototype V4 (as the planned series version) had already East German designed and built Pirna 014A turbojets.

The 152 was ordered by Deutsche Lufthansa (East Germany) and the NVA (East German Armed Forces). LOT and Iraqi Airways are also reported to have placed options, but there is no documentary evidence to prove this. However, the main market for the 152 was seen in the Soviet Union. So when the Soviet government decided in June 1959 not to buy any German aircraft, it dealt a fatal blow to the 152, an unwanted competitor for the Tu-104. Additionally, the programme ran into technical difficulties. It became less and less probable that the 152 could become a commercial success, and so it did not come as a surprise when the programme was closed down on 28 February 1961. This meant also the end for the fledgling East German aviation industry itself. Its other airliner projects as the 153A, 154 and 155 did not go beyond the mock-up stage.

All aircraft and parts for them were scrapped after cancellation of the 152 programme. Only the fuselage of c/n 011 has survived by chance at Rothenburg airfield; it has been restored and is awaiting display at Dresden Airport since 2001.

As the East German aviation industry was almost completely managed by former Junkers engineers, some authors go so far as to call the 152 'Junkers Ju 152' and the Pirna 014 'Junkers Jumo 014'.

## 152: 5 prototypes completed and several aircraft worked upon by VEB Flugzeugwerke Dresden from 1958 to 1961

V1	DM-ZYA	152/I	FWD, no titles	rgd	20feb58	first prototype; construction started 01feb57; fuselage completed 10feb58; r/o 30apr58 (still incomplete on that date); real r/o late sep58; mfd 24oct58; first flight 04dec58 from DRS, crashed on its second flight 04mar59 near Dresden when the fuel system failed during steep descent, all 4 crew killed
V2	--	152/I	natural metal	mfd	30jul58	static test airframe; construction started 01feb57; horizontal stabilizer test-flown on top of Il-14P DM-ZZB jul58; airframe underwent trials 23aug58/sep60, repaired oct/dec60; new fatigue trials in water tank dec60/nov61, again repaired apr61; dbr during trials 17nov61; trials completed in summer 1962; fuselage transported to SXF in 1962 and scrapped there in 1984 after having been used for training by airport fire brigade
V3	--	152/I	--			prototype for flight tests of the Pirna 014A engines; construction started in mid 1957; r/o planned for 31dec58 and f/f for 31mar59 as DM-ZYB, but production stopped 11feb58; parts already manufactured used for tests and for repairs of V2 (see above)
V4	no reg	152/II	natural metal	r/o	14mar60	second prototype; construction started in summer 1958; still incomplete and unpainted during r/o (surface was just covered by protective layer), but had East German flag on fin; underwent ground tests 14mar/30apr60; received modified 014A-0 engines may60 and completed 24jun60
	DM-ZYB	152/II	FWD, no titles	r/o	24jun60	second r/o; f/f 26aug60 from DRS, second and last flight 04sep60; afterwards modernised until 31mar61; CoFA revoked 01nov60; scrapped at DRS after 14apr61
V5	DM-ZYC	152/II	FWD, no titles	r/o	07sep60	third prototype; f/f planned for sep60, but cancelled; underwent ground trials sep60/apr61; CoFA revoked 01nov60; scrapped at DRS after 14apr61
V6	--	152/II	natural metal	mfd	31jan60	static test airframe; underwent trials mar60/30jun61; fuselage partly destroyed dec60, but repaired; probably scrapped at DRS in 1961, but fuselage possibly transported to Rothenburg and stored there for some time
V7 (015)	--	152/IIA	--			dynamic test airframe (for fatigue trials in the water tank) to be built after c/n 014; construction started nov60; mfd planned for 01dec61, but cancelled while under construction; most parts were already manufactured (7.0 % complete by 17mar61)
008	DM-SCA	152/IIA	FWD, no titles ?	rgd	early61	first production aircraft; planned for Deutsche Lufthansa, but re-assigned as trials aircraft in sep60; mfd planned for 31dec60, completed by 96.1 % 17mar61 when the programme was cancelled; scrapped 05apr61, fuselage transported to Marxwalde and scrapped there in 1988
009	DM-SCB	152/IIA	FWD, no titles ?			second production aircraft, to be used for trials first and then to be delivered to the East German AF; basically complete by may60, 95.3 % complete by 17mar61; scrapped in 1961, fuselage transported to Marxwalde and scrapped there later
010	--	152/IIA	natural metal			third production aircraft, planned for East German AF and later for Deutsche Lufthansa (as replacement for c/n 008); 60.0 % complete (airframe) by 17mar61; broken up in 1961, fuselage transported to Rothenburg and scrapped there later
011	--	152/IIA	natural metal			fourth production aircraft, planned for Deutsche Lufthansa; 35.7 % complete (fuselage and wings) by 17mar61; broken up in 1961, fuselage transported to Bautzen in 1961 and to Rothenburg in 1962; recovered 09aug95 and restored by Elbe Flugzeugwerk Dresden oct95/may01; on display at Dresden Airport since 08jun01
012	--	152/IIA	natural metal			fifth production aircraft, planned for East German AF; 28.1 % complete (only fuselage) by 17mar61; scrapped in 1961, fuselage transported to an East German AF airfield (possibly Rothenburg) in 1961
013	--	152/IIA	natural metal			sixth production aircraft, planned for East German AF; mfd was planned for 01oct61; 22.9 % complete (only fuselage) by 17mar61; scrapped in 1961, fuselage transported to an East German AF airfield in 1961
014	--	152/IIA	natural metal			seventh production aircraft; 7.1 % complete by 17mar61 (fuselage probably basically completed)

Apart from that, further aircraft were in various stages of production when the programme was cancelled in March 1961: c/ns 016 to 020: many parts for the aircraft were manufactured; c/ns 021 to 028: manufacturing of parts had started.

# Intracom GM-17 "Viper" & DS-18

This business aircraft was a look-alike of the TBM-700 or the PC-12; in Russia it was a direct competitor of the M-101T "Sokol" - with neither of the two seeing any success. The GM-17 could transport six passengers over a distance of up to 1,800 km at a speed of 400 km/h. Development started in 1998 at the Moscow-based design bureau Aeroprogress on behalf of Intracom General Machinery (hence the designation GM) from Switzerland. The aircraft was also marketed by Intracom, a company owned by an emigrated Russian businessman.

A Piper PA-31P was taken as the basis for the design, its two Lycoming piston engines being replaced by a single Czech M-601E turboprop from Walter. Apart from that, the GM-17 received new avionics, and many of its systems were completely redesigned. All this reduced the weight by 300 kg and considerably improved the aircraft's characteristics at reasonable cost. A full-scale mock-up was completed in 2000, but Intracom was not satisfied with the project. So the programme was transferred to Smolensk-based Tekhnoavia under chief designer Vyacheslav Kondratyev. He started almost from scratch in redesigning the aircraft, and the modified project was ready by 2001. Production was taken up at the Smolensk aircraft factory (SmAZ) in 2002, and four GM-17s were completed during 2003 (their first flights are reported as having taken place in July, August, October and December, respectively). No further progress was made after that, and the Smolensk aircraft factory decayed more and more. A new start was made in 2016 with the DS-18, an aircraft looking very similar to the GM-17, but now built by AeroVolga at Krasny Yar (near Samara). The prospects of the whole project look bleak, though.

## 1 GM-17 prototype built by the Khrunichev Space Corporation (GKNPTs) in 2000

GM-17-000	RA-01559	GM-17	Intracom	f/f	06dec00	probably an illegal registration; the first prototype, converted from Piper PA-31P-425 N38RG c/n 31P-7530007; t/t 6 hours and 10 cycles by feb01; relegated to static tests feb01; later transferred to SmAZ at Smolensk for disassembly and rebuild (changes included replacement of winglets by tip-tanks and revised nose contours); f/f after rebuild jan03; t/t 60 hours by apr03; relegated to static tests apr03
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## 3 GM-17 built by SmAZ (former Factory # 475) at Smolensk in 2003

GM-17-001	01 001 RA-3041K EX-052	GM-17 GM-17 GM-17 GM-17	natural metal primer Intracom Intracom	photo photo photo rgd	early06	probably converted from PA-31P-425 G-OIEA c/n 31P-7300141 (delivered to SmAZ nov01) during ground tests at Myachkovo, date unknown; in white c/s with red/golden/red cheatline, no titles c/n from sales offer; based at GVA; in white c/s with multi-layer golden/blue cheatline, no titles; f/n Smolensk-Severny 02may06; offered for sale by Intracom dec08 with t/t 203 hours; stored at GVA, seen jan09/mar13
	RA-1671G	GM-17	Intracom	rgd	01feb12	based at GVA; in white c/s with multi-layer golden/blue cheatline, no titles; f/n GVA 18apr13; l/n GVA 22may13; current on register 13jan17
GM-17-002	02 RA-44471	GM-17 GM-17	natural metal Intracom	photo ph.	01aug02	probably converted from PA-31P-425 SE-IGB c/n 31P-7300167 (delivered to SmAZ nov01) Russian demonstrator; illegal registration according to the Russian register office; c/n read off the air-intake cover as '002' at ZIA 20aug03; f/f mar03; flew 62 hours during the first 3 months; in white/grey c/s with red/golden/red cheatline and 'Viper' titles; f/n Smolensk-Severny 26jul03; l/n ZIA 24aug03
GM-17-003	RA-3042K ? no reg	GM-17 GM-17	not known primer	d/d mfd	oct03 ? 2003	reportedly the initial customer delivery converted from a PA-31P (delivered to SmAZ nov01); European demonstrator, fitted with enlarged wing-tip pods containing radar (starboard) and landing light in all-white c/s, no titles
	RA-3043K EX-053	GM-17 GM-17	Intracom Intracom	Mya BTS	09sep04 04oct05	c/n from sales offer; based at GVA; in white c/s with multi-layer golden/blue cheatline, no titles; seen several times with an Intracom logo on the fin; offered for sale by Intracom dec08 with t/t 106 hours; stored at GVA, seen jan09/mar13
	RA-1673G	GM-17	Intracom	rgd	01feb12	based at GVA; in white c/s with multi-layer golden/blue cheatline, no titles; f/n GVA 18apr13; l/n GVA 15oct14, stored; current on register 13jan17

### 1 DS-18 prototype built by AeroVolqa at Krasny Yar (near Samara) in 2016

--- no reg DS-18 primer f/f 04nov16 demonstrator of this version, converted from a Piper PA-31P; in primer without any markings whatsoever

## Irkut MC-21

The MC-21 (Magistralny samolyot 21-go veka, Russian for 'Airliner of the 21st Century') is a twin-engine short to medium-range jet airliner with a capacity of 150-180 passengers developed by the Irkut Corporation in co-operation with the Yakovlev Design Bureau (both are part of the United Aircraft Corporation or OAK group) and built by the Irkutsk Aircraft Factory. In correct transcription from Cyrillic, the English designation would be MS-21, but Irkut insists on MC-21 for marketing purposes. Development started around 2008 and assembly of the prototypes on 6 February 2014, while the first flight took place on 28 May 2017. The aircraft is offered with two types of engines - the Pratt & Whitney PW1400G geared turbofan which is preferred by most airlines and the Aviadvigatel PD-14 which will power the aircraft for the Russian government and military. The MC-21 is to replace the Tu-154 and Tu-204 as well as older Boeing 737 and A320 models. Its main competitor is expected to be the Chinese COMAC C919. The first order came from the Russian airline Red Wings which signed a contract for 16 MC-21s (among them four with PD-14 engines) in July 2017. Aeroflot followed suit by placing an order for 50 aircraft (among them 25 with PD-14 engines) in February 2018.

### MC-21 prototypes and production aircraft built by IAZ at Irkutsk-2 from 2016

21001	001	MC-21-300	Irkut	r/o	08jun16	the first prototype, with PW1400G-JM engines; construction started 06feb14; in white c/s with blue tail, large 'MC-21-300' and small 'OAK' titles plus large '001' and small '21001' on the tail; named 'A.S. Yakovlev'
	73051	MC-21-300	Irkut	Ik2	10may17	in white c/s with blue tail, large 'MC-21-300' and small 'OAK' titles plus large '001' and small '21001' on the tail; named 'A.S. Yakovlev'; f/f 28may17; ferried from Irkutsk-2 to ZIA dec17; l/n ZIA 01feb18
21002	--	MC-21-300	Irkut			static test airframe; construction started in 2015; seen on the assembly line 08jun16; fuselage flown to ZIA 12aug16; to undergo static trials with the TsAGI at ZIA
21003	--	MC-21-300	Irkut			the second prototype, with PW1400G-JM engines
21004	--	MC-21-300	Irkut			the third prototype, with PW1400G-JM engines
21005	--	MC-21-300	Irkut			dynamic test airframe for fatigue trials; to be built until 31mar18
21006	--	MC-21-300	Irkut			the fourth prototype, with PW1400G-JM engines
21007	--	MC-21-300	Irkut			the fifth prototype, with PW1400G-JM engines
21008	--	MC-21-300	Irkut			the sixth prototype
21009	--	MC-21-300	Irkut			the seventh prototype
21010	--	MC-21-300	Irkut			the eighth prototype, with PD-14 engines
21011	--	MC-21-300	Irkut			the ninth prototype, with PW1400G-JM engines

## Kalinin K-7

The K-7 was a long-range heavy bomber and transport in 'flying wing' configuration with two tailbooms, designed in competition to the Tupolev ANT-16 (TB-4). It was powered by seven Mikulin M-34 engines and was to carry a bomb load of 13 tonnes or 128 passengers (respectively 112 paratroopers). Construction of the prototype started in November 1932, and it made its first flight on 21 August 1933. Unfortunately, the prototype crashed during a test flight three months later. Apart from that, the view of the Soviet Air Force leadership on heavy aircraft changed, and so the programme was stopped in spring 1936.

### 2 K-7 prototypes built by KhAZOSS at Kharkov in 1933-36

---	no code	K-7	KhAZOSS	f/f	21aug33	first prototype, with 7 M-34 engines; construction started nov32; taxi trials started 08aug33, made a short hop 19aug33; modified after its 1st flight and made its 2nd flight 22sep33; w/o 21nov33 during a test flight from Kharkov when the lower spar of the left tailboom broke due to strong vibrations and blocked the control cables of the stabiliser, the aircraft entered a dive, crashed some 5 km from the airfield, caught fire and burnt out, 15 of the 20 occupants killed; t/t more than 5 hours
---	--	K-7	--			military version, with 6 M-34RN engines; construction started may34, readiness reached 60 % by may35; construction stopped apr36; stored for some time and then scrapped

## Kazan "Ansats"

The "Ansats" (means 'easy to start' in the Tatarian language, Kazan is the capital of Tatarstan) is a light multi-purpose helicopter designed and produced by Kazan Helicopters (KVZ). It is the first design by this series-production plant which wanted to become less dependent of the Mil Design Bureau. Development of the "Ansats", which is to replace the Mi-2 and stands in close competition with the Ka-226 and the PZL W-3 in Eastern Europe, started in 1994. A full-scale mock-up was completed in May 1997, and the first flight took place on 17 August 1999. The helicopter was designed in compliance with the new Russian AP-29 airworthiness requirements (harmonized with the American FAR-29 standard) and received its type certificate on 29 December 2004.

The basic "Ansats" model can carry ten passengers or one tonne of payload (1.2 tonnes at the external sling). An "Ansats-U" training version (on wheels) was developed under a contract with the Russian MoD which plans to procure 40 such helicopters until 2020. The "Ansats-2" was to be an armoured reconnaissance helicopter and the "Ansats-3" a longer version with an extended load-carrying capacity. Both remained in prototype stage, though.

Whereas the first prototype was powered by two Pratt & Whitney Canada/Klimov PK-206C turboshaft engines, their improved version PW-207K was used from the second prototype onwards. Even the military "Ansats" are powered by Western engines, as no Russian or Ukrainian alternative is available. Just the planned larger version "Ansats-M" is to be powered by two Klimov VK-800 turboshafts. Series-production started in 2004, and Kazan Helicopters had built 29 "Ansats" (six prototypes, ten civil and 13 military helicopters) by 2012. As there were problems with the reliability of the fly-by-wire system, a version with hydro-mechanical flight controls, the "Ansats-1M", had to be developed. The initial version with fly-by-wire was improved as well, resulting in the "Ansats-K" (K for Korean). A new type certificate was issued in March 2010, but none of the versions is certified to carry passengers...

The c/n is embossed on small metal plates on the inner faces of the fins or on the lower rear part of the fuselage and is somewhat difficult to explain. Export helicopters receive 'traditional' export numbers, starting with the ISO 3166 code of the respective country.

### "Ansats" built by Kazan Helicopters (KVZ) at Kazan from 2004

---	no reg	Ansats	Kazanski VZ	mfd	may97	full-scale mock-up; in blue/white c/s with light blue trim and 'ANSAT' titles on tailboom; f/n LBG jun97; l/n ZIA aug97
---	no reg	Ansats	Kazanski VZ	photo		fuselage mock-up of the medevac version (without rotor and tail boom); in white c/s with red trim, Red Cross, ambulance logo and 'EKSTRENNAYA MEDITSINSKAYA POMOSHCH' titles
---	no code	Ansats-U	Kazanski VZ	photo		fuselage mock-up of the training version (without rotor and tail boom), on wheels; in all-green c/s without any markings
---	no code	Ansats-2	Kazanski VZ	ZIA	aug01	full-scale mock-up of the armoured reconnaissance version; in white/grey c/s with red trim
---	no code	Ansats-3	Kazanski VZ	ZIA	aug03	fuselage mock-up of the longer version with extended load-carrying capacity (without rotor and tail boom), on wheels; in all-green c/s without any markings, later reportedly with 'ANSAT-3' titles
---	no code	Ansats	primer	mfd	1998	static test airframe; had logged more than 800 hours of ground operating time by 2003
---	"02" blue	Ansats	Kazanski VZ	f/f	17aug99	first prototype; in white c/s with blue cheatline; first official presentation at Kazan 11oct99

	"902" white	Ansats	Kazanski VZ	ZIA	aug01	in white c/s with blue cheatline; factory trials completed in autumn 2001; modified and re-fitted with PW-207K engines in late 2001; l/n Kazan aug02, active; relegated to ground tests after having logged about 150 hours	
	"902" black	Ansats-2Rts	Kazanski VZ	f/f	29jul05	Armoured Reconnaissance Helicopter (ARH) demonstrator, built using the dynamic components of "902" white given with the same c/n although is a complete different stucture, for example this is a tandem seat cockpit where the original frame was a side-by-side cockpit; in sand/brown camo c/s; f/n ZIA 15aug05; l/n ZIA 24aug07	
	---	"03" blue	Ansats	Kazanski VZ	f/f	27dec01	second prototype, for certification trials; still in all-white c/s during its f/f, later in white/blue c/s; underwent factory certification trials 31oct02/jun04 (over 300 flights with more than 200 hours)
02 04 01	"904" black	Ansats	Kazanski VZ	mfd	late 02	third (pre-production) prototype; c/n embossed on small metal plates on the inner faces of the fins; in white/blue c/s; f/n ZIA 21aug03; l/n Syzran-Troyekurovo 28may05	
	---	no code	Ansats-US	Russian Air Force	CKL	22nov08	fourth prototype (prototype of the military VIP helicopter); in basic Rossiya c/s without titles; l/n Kubinka 28mar09
PT-05	"905" grey	Ansats	Kazanski VZ	mfd	2004	c/n also given as 030901; the fifth (production-standard) prototype; initially in light grey c/s with blue trim and large 'ANSAT' titles; f/n ZIA 16aug05; l/n as such at Kazan Helicopters 24aug09; repainted in white/black 'zebra' c/s with 'Kazan Helicopters' titles; f/n as such ZIA 30aug13	
	"905" black	Ansats	Vertolyoty Rossii	ph.	22may14	in black/silver c/s with 'Russian Helicopters' titles; displayed during the "HeliRussia 2014" and "HeliRussia 2015" exhibitions at the Crocus City IEC in Moscow 22/24may14 and 21/23may15; l/n ZIA jul17	
	---	no code	Ansats-U	Russian Air Force	mfd	01apr04	sixth prototype (prototype of the training version); in olive drab/khaki camo c/s with light grey underside; was to undergo state trials in 2005; f/n ZIA 18aug09
PT-07 or 08	no reg	Ansats-1M	Kazan Helicopters	Kzh	27apr12	prototype of the version with hydro-mechanical flight controls instead of fly-by-wire; probably converted from one of the two helicopters built for Laos but not delivered; in white c/s with black trim, with titles; f/f was planned for may12	
PT-07 or 08	--	Ansats-1M	Kazan Helicopters	mfd	2012	static test airframe of this version; probably converted from one of the two helicopters built for Laos but not delivered	
OP-07	not known	Ansats	Vertolyoty Rossii			in an insurance tender for 2016	
PT-08	not known	Ansats	Vertolyoty Rossii			in an insurance tender for 2016	
05 01 01	20440	Ansats-LL	Radar MMS	d/d	2005	flying laboratory with special radio-electronic equipment, used for trials (development of new weapons systems, for example the cruise missile "Granat") on behalf of the Russian Navy; in orange/blue c/s with red trim, Russian Navy flag on engine cowling; f/n ZIA 15aug05; l/n KZN 20apr06; h/o 02may06	
	33 012	no reg	Ansats	Kazan Avn. Ent.	h/o	17may06	c/n not confirmed; in silver c/s with blue trim, Red Cross on rear fuselage; f/n KZN 17may06; was to be used for ambulance flights by the RKB (Republican Clinical Hospital of Tatarstan), but never received the necessary medical equipment; was still at the factory nov06
	RA-20012	Ansats	Kazan Avn. Ent.	KZN	04jul08	c/n confirmed; in silver c/s with blue trim, 'Kazanskoye Aviapredpriyatiye' titles, without Red Cross now; not on register aug10; l/n ZIA 19aug11	
	33 014	not known RF-21021	Ansats-K	not known Tatarstan Police	no reports Kzh	27apr12	possibly completed as an ambulance helicopter, but not delivered; converted in 2011 to, see next line h/o 26dec12; opb aoon MVD po Respublike Tatarstan at KZN; in blue/white/blue c/s with 'Politsiya' (Police) titles and a Tatarstan coat-of-arms; tender for repair published 20oct14; l/n KZN 25sep17
	33 015	RA-20015 20015 RF-28539	Ansats-S Ansats-S Ansats-S	Rossiya Rossiya FSB	d/d LED d/d	mid2006 08jul06 31may08	VIP version; f/n KZN 04jul06 (photo proof of prefix) without prefix now (photo proof); returned to the factory after the crash of FP305 based at Yoshkar-Ola-Danilovo; in dark blue/white/natural metal c/s with blue trim, no titles; f/n Yoshkar-Ola-Danilovo 12aug08; l/n operational Yoshkar-Ola-Danilovo 23aug12; stored with the SibNIA at Novosibirsk-Yeltsovka, seen dec15
	33 016	RA-20016 20016 no reg	Ansats Ansats Ansats	Rossiya Rossiya FSB	d/d LED ph.	mid2006 08jul06 15may08	passenger version; must have had a prefix (see RA-20015 above) without prefix now (photo proof); returned to the factory after the crash of FP305
	RF-28540	Ansats	FSB	d/d	31may08	c/n not checked, but was referred to that day by the exhibition personnel as the '16th production helicopter'; VIP version; in dark blue/white/natural metal c/s with blue trim, no titles; displayed during the "HeliRussia 2008" exhibition at the Crocus City IEC in Moscow City 15/17may08	
	33 027	no reg	Ansats-GMSU	Vertolyoty Rossii	ZIA	28aug15	c/n confirmed; based at Yoshkar-Ola-Danilovo; in the same c/s as above; f/n Yoshkar-Ola-Danilovo 12aug08; l/n operational YXS 24sep10; stored with the SibNIA at Novosibirsk-Yeltsovka (with the registration taped over), seen dec15
	33 031	"30" yellow	Ansats-U	Russian Air Force	h/o	30dec09	the first production "Ansats" with hydro-mechanical flight controls; initially in silver c/s with red and blue trim, no titles; l/n as such ZIA 30aug15; equipped with a 'glass' cockpit and repainted in orange c/s with maroon trim, Russian 'RPKB' and English 'KRET' titles; displayed as such during the "HeliRussia 2017" exhibition at the Crocus City IEC in Moscow 25/27may17; f/f reportedly jul17 (from Kazan); repainted in silver c/s with black, white and red trim, additional Russian 'KRET' titles, the inscription "Skoraya Pomoshch" (emergency medical service) and the EMS phone number '03'; displayed as such during "MAKS-2017" airshow at ZIA 18/23jul17
	33 032	"31" yellow	Ansats-U	Russian Air Force	h/o	30dec09	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in olive drab/khaki camo c/s with light grey underside; ferried from the factory to Sokolovy only 08oct10
	33 033	"33" yellow	Ansats-U	Russian Air Force	h/o	30dec09	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in olive drab/khaki camo c/s with light grey underside; ferried from the factory to Sokolovy only 08oct10; f/n Sokolovy 08oct10, still without code
	33 036	"36" yellow	Ansats-U	Russian Air Force	mfd	2011	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; f/n at the factory 14oct11; h/o 08dec11, but remained with the factory until 16jan12; l/n ZIA 12aug12
	33 037	"37" yellow	Ansats-U	Russian Air Force	mfd	2011	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; f/n at the factory 14oct11; h/o 08dec11, but remained with the factory until 16jan12; l/n Sokolovy 21jul12
	33 038	"38" yellow	Ansats-U	Russian Air Force	mfd	2011	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; f/n at the factory 14oct11; h/o 03dec11, but remained with the factory until 16jan12; l/n ZIA 12aug12
	33 039	"39" yellow	Ansats-U	Russian Air Force	mfd	2011	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; f/n at the factory 14oct11; h/o 03dec11, but remained with the factory until 16jan12; l/n ZIA 12aug12
	33 040	"40" yellow	Ansats-U	Russian Air Force	mfd	2011	opb 131 uvp Syzranskogo filiala VUNTS VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; h/o 03dec11, but remained with the factory until 16jan12; f/n at the factory 16jan12; l/n Sokolovy aug12
	33 065	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 066	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 067	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 068	no reg	Ansats-GMSU	Vertolyoty Rossii	ph.	19may16	the second production "Ansats" with hydro-mechanical flight controls (GMSU), VIP version; in silver c/s with red and blue trim, no titles; displayed during the "HeliRussia 2016" exhibition at the Crocus City IEC in Moscow 19/21may16
	RA-20001	Ansats-GMSU	RVS	rgd	01aug16	Russkiye Vertolyotnyye Sistemy; VIP helicopter; in silver c/s with red and blue trim, no titles; h/o at the Helipark Barvika 28oct16; displayed during the "HeliRussia 2017" exhibition at the Crocus City IEC in Moscow 25/27may17; l/n ZIA 20jul17; current on register 04aug17	
	33 069	RA-20006	Ansats-GMSU	RVS	rgd	17oct17	Russkiye Vertolyotnyye Sistemy; ambulance helicopter; in white c/s, no titles; h/o 19oct17; f/n KGN 02dec17
	33 070	RA-20007	Ansats-GMSU	RVS	rgd	14sep17	Russkiye Vertolyotnyye Sistemy; ambulance helicopter; in white c/s, no titles; h/o 14sep17; f/n with Kazan Helicopters 14sep17; based in the Pskov region
	33 071	RA-20008	Ansats-GMSU	Kostroma Air Ent.	rgd	22dec17	ambulance helicopter
	33 074	RA-20005	Ansats-GMSU	RVS	rgd	22may17	Russkiye Vertolyotnyye Sistemy; ambulance helicopter; in silver c/s with red and blue trim, no titles; h/o may17; based in the Volgograd region; displayed during the "HeliRussia 2017" exhibition at the Crocus City IEC in Moscow 25/27may17; had to abort take-off 27may17 as one blade of the main rotor had been fitted upside-down
	33 075	RA-20002	Ansats-GMSU	Aviaservis	rgd	28oct16	ambulance helicopter; operated on behalf of the Ministry of Health of Tatarstan for the RKB (Republican Clinical Hospital of Tatarstan) at Kazan; in white/red c/s with just 'Ambulance' titles; h/o at Kazan 12oct16; current on register 04aug17
	33 076	RA-20004	Ansats-GMSU	Vyatkaavia	rgd	01aug17	ambulance helicopter; h/o aug17; based in the Kirov region
	33 077	RA-20009	Ansats-GMSU	RVS	rgd	04aug17	Russkiye Vertolyotnyye Sistemy; ambulance helicopter; in white c/s with 'Meditsina Katastrof' titles; h/o 02sep17 at Podushkino; based in the Kurgan region and seen there 02dec17
	33 078	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 079	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 080	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 081	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 082	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 083	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 084	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 085	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 086	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
	33 087	not known	Ansats-U	Russian Air Force			in an insurance tender for 2016
398 A 01	no reg	Ansats	Kazan Helicopters	ph.	16may12	built for Kazakhstan, but not delivered; demonstrator of the passenger version; in black/purple/white c/s with titles; displayed during the "HeliRussia" exhibitions at the Crocus City IEC in Moscow City 17/19may12 and 16/18may13; l/n ZIA 30aug13	
	410 A 01	not known	Ansats-1	S. Korean Police	d/d	dec04	export CoFA dated 21jul05; was never on the South Korean register; grounded jul06/2010; possibly returned to Kazan Helicopters
	410 A 02	FP301 HL9438	Ansats-1 Ansats-1	Korea Forest Serv. Korea Forest Serv.	d/d r/r	dec04 29nov07	toc 24feb05; f/n 03may05; export CoFA dated 21jul05; in white/orange c/s based at Chungbuk Jincheon; grounded jul06/2010; possibly returned to Kazan Helicopters, see below; canx 04feb14 as wfu
	410 A 03	FP302 HL9439	Ansats-1 Ansats-1	Korea Forest Serv. Korea Forest Serv.	d/d r/r	dec04 29nov07	toc 24feb05; export CoFA dated only 21jul05; in white/orange c/s based at Chungbuk Jincheon; grounded jul06/2010; to be modified to Ansats-K; canx 04feb14 as wfu



410 A 04	FP303 HL9440 "909" black FP305	Ansats-1 Ansats-1 Ansats-K Ansats-1	Korea Forest Serv. Korea Forest Serv. Vertolyoty Rossii Korea Forest Serv.	f/f r/r Tml f/f	nov05 29nov07 01sep14 nov05	export CoFA dated 21jul05; toc 16dec05; in white/orange c/s based at Seoul-Kimpo; grounded from jul06; canx 04feb14 as wfu; converted to, see next line in silver/black c/s with white trim and small 'Russian Helicopters' titles; l/n ZIA 22jul17 export CoFA dated 21jul05; d/d 16dec05; in white/orange c/s; w/o 27jul06 during a pest control mission of chestnut trees in Chungcheongnam-do when crashed into the forest for unknown reasons, pilot killed; FP304 is probably not an Ansats
410 A 06	FP306 HL9441	Ansats-1 Ansats-1	Korea Forest Serv. Korea Forest Serv.	d/d r/r	jun06 ? 29nov07	serial not confirmed; toc 06oct06 based at Seoul-Kimpo; grounded jul06/2010; to be modified to Ansats-K; canx 04feb14 as wfu
410 A 07	--	Ansats-1	--	--	--	built for the South Korean Police, but not delivered
418 A 01	no reg no reg --	Ansats Ansats-1 Ansats-1	Vertolyoty Rossii Kazan Helicopters primer	Kub ZIA Kzh	10sep16 24aug07 24aug09	in white/blue c/s with additional 'Police' titles; l/n Kubinka 18aug17 c/n checked; in dark blue/white/grey c/s with blue trim and full titles; was to be delivered to Laos in 2008 on the assembly line, with a Laotian flag painted on; c/n reported as 41DB01 or 410B01, but that does not seem possible and the reporter was not sure of the letter; possibly later converted into one of the two Ansats-1M prototypes
418 A 02	--	Ansats-1 Ansats-1	primer	no Kzh	reports 24aug09	was to be delivered to Laos in 2008 on the assembly line, with a Laotian flag painted on; c/n reported as 41DB02 or 410B02, but that does not seem possible and the reporter was not sure of the letter; possibly later converted into one of the two Ansats-1M prototypes
---	975	Ansats-1	South Korean Pol.	ph.	2013	in red/white c/s with 'Police' titles; stored together with a second Police "Ansats" with unknown serial
---	"45" yellow	Ansats-U	Russian Air Force	Sso	15mar13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka apr15
---	RF-13352	Ansats-U	Russian Air Force	Kub	17jun15	also carried code "45" yellow; opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars
---	RF-13353	Ansats-U	Russian Air Force	Kub	12jun15	also coded "53" yellow; in camo c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka 09sep16
---	RF-13354	Ansats-U	Russian Air Force	Kub	17jun15	also coded "54" yellow; in camo c/s with 'VVS Rossii' titles and Russian stars
---	RF-13355	Ansats-U	Russian Air Force	Kub	12jun15	also coded "56" yellow; in camo c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka 19jun15
---	RF-04454	Ansats-U	Russian Air Force	ZIA	15jul17	also coded "67" yellow; in camo c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka 24aug17
---	RF-90632	Ansats-U	Russian Air Force	Kub	17aug17	also carried code "58" yellow; in olive drab/khaki camo c/s with light blue underside, with 'VVS Rossii' titles and Russian stars
---	"59" yellow	Ansats-U	Russian Air Force	--	--	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in olive drab/khaki camo c/s with light blue underside, with 'VVS Rossii' titles and Russian stars
---	RF-90633	Ansats-U	Russian Air Force	trf	2015	also carried code "259" yellow; opb 800 AvB (redesignated 8 adon 23feb17) at CKL; in olive drab/khaki camo c/s with light blue underside, with 'VVS Rossii' titles and Russian stars; f/n Kubinka 02sep16; l/n Kubinka 10sep16
---	"60" yellow	Ansats-U	Russian Air Force	--	--	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in olive drab/khaki camo c/s with light blue underside, with 'VVS Rossii' titles and Russian stars
---	RF-90634	Ansats-U	Russian Air Force	trf	2015	also carried code "260" yellow; opb 800 AvB (redesignated 8 adon 23feb17) at CKL; in olive drab/khaki camo c/s with light blue underside, with 'VVS Rossii' titles and Russian stars; f/n Kubinka 06sep16; l/n Kubinka 10sep16
---	"28" yellow	Ansats-U	Russian Air Force	h/o	12dec09	opb filial 4 TSBP i PLS at Torzhok; with light grey underside; ferried to Torzhok only in spring 2010; f/n Torzhok 15aug10, code not painted on
---	"32" yellow	Ansats-U	Russian Air Force	h/o	12dec09	opb filial 4 TSBP i PLS at Torzhok; ferried to Torzhok only in spring 2010
---	"35" yellow	Ansats-U	Russian Air Force	d/d	18oct10 ?	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in olive drab/khaki camo c/s with light grey underside; initially with Red Stars, l/n as such ZIA 16aug11; seen with Russian stars (but without titles) ZIA 17aug11; l/n ZIA 18aug11
---	"41" yellow	Ansats-U	Russian Air Force	d/d	2012	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars
---	"43" yellow	Ansats-U	Russian Air Force	Sso	15mar13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka apr15
---	"44" yellow	Ansats-U	Russian Air Force	Sso	15mar13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka apr15
---	"46" yellow	Ansats-U	Russian Air Force	Sso	15mar13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; l/n ZIA 26aug13
---	"47" yellow	Ansats-U	Russian Air Force	d/d	22nov13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars
---	"48" yellow	Ansats-U	Russian Air Force	d/d	22nov13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars
---	"49" yellow	Ansats-U	Russian Air Force	d/d	22nov13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars; l/n Kubinka apr15
---	"50" yellow	Ansats-U	Russian Air Force	d/d	22nov13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars
---	"51" yellow	Ansats-U	Russian Air Force	d/d	22nov13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars
---	"52" yellow	Ansats-U	Russian Air Force	d/d	22nov13	opb 131 uvp Syzranskogo filiala VUNTs VVS "VVA" at Sokolovy; in grey c/s with 'VVS Rossii' titles and Russian stars

## Khrunichev T-440 "Merkuri"

The T-440 "Merkuri" (Russian for 'Mercury') was an executive aircraft developed by the Aeroprogress aircraft design bureau of the Khrunichev Space Corporation (GKNPTs). It was to carry eight passengers in the business version or four in a VIP configuration over a distance of 3,800 km at a speed of 550 km/h. The aircraft was to have a pressurised cabin and could operate at altitudes of up to 10,000 metres in favourable or difficult weather conditions.

The T-440 was designed with two Pratt&Whitney Canada PT6A-135A turboprops, but Czech Walter M-601F or Russian TVD-100 turboprops might also have been fitted in the case of the business version. The full cost of scientific research and experimental design work for the "Merkuri" was estimated at \$ 20 million, and the price of each aircraft was to be approximately \$ 2 million. A full-scale mock-up of the aircraft was built and presented during two MAKS exhibitions, but the project was closed down because of financial problems.

### 1 full-scale T-440 mock-up built by Aeroprogress

---	RA-44097	T-440	Khrunichev	ZIA	aug97	full-scale mock-up; in all-white c/s with red cheatline, small 'GKNPTs im. M.V. Khrunicheva' titles on fuselage
---	RA-44099	T-440	Khrunichev	ZIA	22aug99	received a new 'registration' for the next MAKS; in all-white c/s with red/white/khaki cheatline, Khrunichev badge on fin and small 'Avialine' titles on nose

## Khrunichev-Aviatekhnik AT-3

The AT-3 (initial designation T-507-3) was designed by Yevgeni Grunin as a successor of the T-101 "Grach". The multi-purpose aircraft was powered by a Czech Walter M601 turboprop engine and could carry two pilots and five to six passengers. The first flight took place on 27 December 2008. A second prototype was under construction by 2009, but never completed. As the aircraft design bureau of the Khrunichev Space Corporation (GKNPTs im. M.V. Khrunicheva) was disbanded in early 2009, one has to assume that the programme was shelved.

### 2 AT-3 prototypes built by Aviatekhnik at Lkhovitsy in 2008/09

---	3504K	AT-3-1	Aviatekhnik	f/f	27dec08	from Borki; first prototype, powered by an M601F; in primer, no titles; f/n Borki 27dec08; l/n Borki 10aug13
---	--	AT-3-2	Aviatekhnik	no	reports	second prototype, powered by an M601E; under construction by 2009, but never completed

## Laville ZiG-1 (PS-89)

The ZiG-1 was designed by French emigré André Laville and his Russian colleague A.V. Kulyov. The aircraft was powered by two M-17f engines and could carry 12 passengers. With a top speed of 284 km/h it was Aeroflot's fastest aircraft at the time. Originally it had been planned to build 50 ZiG-1s, but the design was considered unsatisfactory, and hence only eight aircraft were completed. The designation ZiG-1 was changed to PS-89 in late 1937, with both designations referring to the factory. The construction number consists of the the factory code (89) and a one-digit sequential number.

### 8 PS-89 built by Factory No. 89 GU GVF "Zavod imeni Goltsmana" at Moscow from 1935 to 1938

1	no reg	ZiG-1	NKAP zavod # 89	f/f	spr. 35	prototype; no titles; w/o 15nov35 on a high-speed test flight at low altitude when lost its tailplane, apparently due to buffeting, all 6 occupants (2 pilots and 4 engineers, among them designer Kulyov) killed
89 2	no reg ? CCCP-L2139	ZiG-1 ZiG-1	NKAP zavod # 89 AFL/NII GVF	mfd rgd	1936 19feb37	had initially c/n 2; assembly started mar36; probably completed jul36; underwent factory trials oct36 state trials completed sep37

	URSS-M128	ZIG-1	AFL/International	rgd	19oct37	in documents feb38
	CCCP-L2139	PS-89	AFL/Moscow	rgd	1938	in documents 1938 and mar39; trf to 1 eskadriya magon GVF jul41; still in service by 1942
89 3	URSS-M130	ZIG-1	AFL/International	rgd	21jul37	had initially c/n 3; re-registered 20oct37; in documents jun38
	CCCP-L2140	PS-89	Aeroflot	rgd	1938 ?	in documents mar39 and mar41; underwent special trials 28mar/ 06apr39; used for casevac duties in the 'Winter War' against Finland in 1939/40; in report at Moscow-Khodynka 28may40; canx 1941
89 4	CCCP-L2141	PS-89	Aeroflot	rgd	15feb38	featured in the Soviet movie "Muzhestvo" (Courage) shot in 1939; in documents mar41; canx 1941
89 5	CCCP-L2142	PS-89	AFL/Moscow	rgd	08may38	used for casevac duties in the 'Winter War' against Finland in 1939/40; in report at Moscow-Khodynka 28may40; trf to 1 eskadriya magon GVF jul41; still in service by 1942
89 6	CCCP-L2143	PS-89	AFL/Moscow	rgd	04jun38	used for casevac duties in the 'Winter War' against Finland in 1939/40; trf to 1 eskadriya magon GVF jul41; still in service by 1942
89 7	CCCP-L2144	PS-89	Aeroflot	rgd	15aug38	undertook a round flight to the capitals of 11 union republics 29sep/11oct38; crashed, details unknown; canx 12jan39
89 8	CCCP-L2146	PS-89	Aeroflot	rgd	23nov38	in light c/s with dark cheatline; used for casevac duties in the 'Winter War' against Finland in 1939/40; damaged when a fighter of 147 iap ran into it during take-off; featured in the Soviet movie "Budni" (Everyday Life) shot in 1940; canx 31mar40

## NPO Molniya "Buran"

Although the "Buran" is not really an aircraft, still many people have an interest in spacecraft, and as we have a full listing of the orbiters produced we thought it would be nice to include them in the book for those interested.

The "Buran" (izdeliye 11F35) was the Soviet answer to the US Space Shuttle. But as opposed to the NASA Shuttle, one example of the "Buran" (the BTS-002; BTS stands for 'Large Transport Aircraft') was equipped with jet engines for landing tests, so this one was in fact an aircraft. This is another reason we decided to include the "Buran" into the book.

Design and production of the "Buran" (means 'snowstorm' in Russian) were ordered by a secret decree of the Central Committee of the Communist Party of the Soviet Union and the Council of Ministers of the USSR issued on 12 February 1976. The orbiter was designed by NPO "Molniya", and 13 were built by Tushinski mashinostroitelny zavod (TMZ) 82 at Moscow-Tushino. Only five of these were actually meant to go to space, the other eight were built as component testing platforms and did not necessarily represent complete airframes. All were designated OK for 'orbitalny korabl' (spaceship).

The first and only (unmanned) space flight of a "Buran" took place on 15 November 1988 on top of an "Energia" SLV from Baikonur. After two orbits it landed fully automated on the specially built runway "Yubileiny" in the North of the Baikonur complex. A second, also unmanned, space flight (including a docking with the "Mir" space station) was planned for late 1991, but was cancelled for financial reasons. The "Buran" programme was finally abandoned on 25 June 1993 in the wake of economic turmoil after the collapse of the Soviet Union.

A cockpit section of a "Buran" (apparently from a simulator for the BTS-002) is displayed at the Central House of Aviation and Cosmonautics in Moscow, where it was seen in September 2001. One "Buran" (but it is not clear which) was to be displayed in the "Victory Park" at Saratov in 2002, and two (0.02 and 2.01) have found their way to museums in Germany.

The data presented here is quite complete. However, a few questions remain. For example, the "Buran" displayed in Gorki Park in Moscow is said to be c/n 011 in the exhibition there (although it was not possible to check the c/n on the orbiter itself).

But according to our data, a c/n 011 does not exist. Further, the brochure from the former "Buran" display at Sydney states that c/n 0.03 was a wooden mock-up, which is also contradictory to our data. Any corrections or additions are more than welcome! The number after the sign is the line number whilst the second number is the c/n.

### 5 orbiters built for space flights

# 1K - 1.01	--	Buran	f/f	15nov88	ships designation 'OK-1K'; named 'Buran'; first example for space flights and the only one completed; flown to Baikonur on top of a 3M-T dec85; performed its only space flight (unmanned) 15nov88 with fully automated landing at Baikonur; presented at various airshows on top of An-225 CCCP-82060 in 1989/90; put into storage at Baikonur Spaceport (Kazakhstan) in early 1993, sat on top of an 'Energia' SLV mock-up in assembly building 1 on site 112 since 1999 and was destroyed when the roof of this building collapsed 12may02
# 2K - 1.02	--	Buran			ships designation 'OK-2K'; was to be named 'Burya' (Russian for 'tempest'); flown to Baikonur on top of a 3M-T possibly 23mar88; was earmarked for the second space flight (unmanned docking with the 'Mir' space station) in late 1991 and put on launch pad 110 on top of an 'Energia' SLV as a preparation for that 16/30may91; completed by 95-97 % in early 1993 when the programme was abandoned; in storage in assembly building 80 on site 112A at Baikonur Spaceport (Kazakhstan)
# 3K - 2.01	--	Buran			orbiter's designation 'OK-3K'; first orbiter of the improved series; completed by 30-50 % when the programme was abandoned; was stored at TMZ # 82 in Moscow-Tushino for many years; transported by barge on the Moskva river from ul. Lodochnaya at Tushino to Ramenskoye 22/23jun11; to be displayed during MAKS-2011 at Zhukovskiy aug11
# 4K - 2.02	--	Buran			ships designation 'OK-4K'; never completed and disassembled again when the programme was abandoned; some sections and parts are still stored at TMZ # 82 in Moscow-Tushino
# 5K - 2.03	--	Buran			ships designation 'OK-5K'; never completed; the few sections already assembled were disassembled again and broken up in 1995 at TMZ # 82 in Moscow-Tushino

### 8 so-called 'technological examples' built as component testing platforms

# 1M - 0.01	--	Buran	mfd	1983	ships designation 'OK-M'; used for static and frequency tests; was to be placed in a water basin for EVA training if the programme had continued; placed as an exhibit in Gorki Park in Moscow in 1993; is said to be c/n 011 in the exhibition there; moved to the Economic Achievements Exhibition (VDNKh) in Moscow jul14
# 2M - 0.02	CCCP-3501002	Buran	f/f	10nov85	ships designation 'OK-GLI' or 'BTS-002'; mfd 1984; used for landing tests, equipped with 4 AL-31 jet engines; performed 24 flights/landing tests (of them 18 fully automated) at Zhukovskiy 10nov85/15apr88 with two test pilots aboard; t/t some 8 hours; was stored ZIA until autumn 1999, then disassembled and shipped to Australia; arrived at Sydney 22feb00 and was displayed at Darling Harbour until 15nov01; was stored in Bahrain by ship 04mar08 and arrived at Rotterdam 02apr08, transported on a barge on the river Rhine to Speyer 06/12apr08; preserved in Technik Museum Speyer since 13apr08; l/n aug12
# 3M - 0.03	--	Buran			ships designation 'OK-KS' or 'KS-35'; used for tests of the electrical and radio equipment as well as for software development; completed the first flight of a 'Buran' on top of a 3M-T (CCCP-01502) 01mar83; flown to Chkalovskiy on top of 3M-T CCCP-01402 13aug83 and transported to Kaliningrad; tests started mar84; is located at the factory of RKK 'Energia' in Kaliningrad (now Korolyov)
#4MT - 0.04	--	Buran	mfd	1984	ships designation 'OK-MT' or 'OK-ML2'; used for static tests, technological tuning and tests of ground equipment; flown to Baikonur-Yubileiny airport on top of a 3M-T aug84; is stored in assembly building 80 on site 112A at Baikonur Spaceport (Kazakhstan)
# 5M - 0.05	--	Buran			ships designation 'OK-TVA'; used for temperature, vibration and static tests; consists only of separate sections; is located at the TsAGI in ZIA; the left wing was used for OK-M as on display in Gorki Park
# 6M - 0.06	--	Buran			ships designation 'OK-TVI'; used for temperature and vacuum tests; consists only of the fuselage (without nose section); is located at the NIIKhim Mash (Scientific Research Institute for Chemical Machinebuilding) at Peresvet near Zagorsk (now Sergiyev Posad)
# 7M - 0.15	--	Buran			ships designation 'OK-ML1'; used for frequency and static tests, technological tuning and later for air transportation trials; flown to Baikonur-Yubileiny airport on top of 3M-T CCCP-01402 dec83; stored at the open stand for rocket-engine firing tests (OKI) on site 254 at Baikonur Spaceport (Kazakhstan) since 1997 and probably is the one visible on GE (N45.919611 E63.309931)
# 8M - 0.08	--	Buran			ships designation unknown; used for medical tests; consists basically only of the cabin section; is located at Clinical Hospital # 29 in Moscow

## Petlyakov Pe-8 (TB-7)

The Pe-8 (called ANT-42 by the design bureau) was the only modern four-engined bomber employed by the Soviet Air Force during WWII. It replaced the TB-3 and was itself replaced by war-booty US B-17s and B-24s and eventually by the Tu-4. Only 93 Pe-8s were built as the Soviet industry concentrated their effort on fighters, ground-attack aircraft and light bombers. The initial designation of the type was TB-7, which was officially changed to Pe-8 on 6 September 1942. Combat missions stopped in late 1944 due to fatigue problems. Four Pe-8s were transferred to Polar Aviation after the war. The Pe-8ON was a VIP version with a cabin for 12 passengers and a sleeping compartment for 3 persons.

Two c/n systems were used. For the first 19 aircraft, the c/n started with the product code (42 for ANT-42), followed by the batch number and the number in the batch (one digit each). Starting from batch 5 (batches 3 and 4 were not built), a new system was used. It consisted of the product code, the number in the batch (one or two digits) and the batch number (one or two digits).

### 2 ANT-42 prototypes built by ZOK TsAGI at Moscow-Lefortovo from 1936 to 1938

42 0 1	no code	ANT-42-1	ZOK TsAGI	mfd	19jun36	first prototype; photo 11jun36 under production; in natural metal c/s, no markings whatsoever (photo as such feb37); initially with 4 M-34FRN engines; f/f 27dec36 from Khodynka; underwent factory trials 25dec37/20mar38; received an ATsN-2 turbo-charger during the trials; damaged may37 during a hard
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landing at Podlipki; repair completed 01aug37; underwent state trials 11aug37/28oct37; received 4 M-34FRNB engines and underwent joint state trials with them 06mar38/30apr38; received 4 M-34FRNV engines and underwent joint state trials with them 26sep38/26mar39; converted for service in the Arctic in 1940/41 (probably received diesel engines), but hand-over to Polyarnaya Aviatziya was prevented by the outbreak of the war; wings painted in red used by Factory No. 22 at Kazan for training from the outbreak of the war; dbr may43 when took off with locked diving-rudder and force-landed in a swamp close to the airfield, all crew and the sole (unauthorised) passenger escaped unhurt

second prototype ('dublyor' or izd. 385D); initially with M-34FRNV engines plus an ATsN-2 turbo-charger; f/f 26jul38; ferried to NII VVS at Chkalovski 11aug38 and underwent joint state trials 11aug38/28dec38; later re-engined with AM-35 and then with AM-35A engines; trf to 890 ap dd 10jun42; overhauled in 1944/45 and repainted in a light c/s; was to take part in the Victory Parade jun45

## **91 TB-7/Pe-8 built by Factory No. 124 (became Factory No. 22 in December 1941) at Kazan from 1940 to 1944**

(1940: 12, 1941: 23, 1942: 22, 1943: 29, 1944: 5)

42 0 2	"1" blue	ANT-42	Soviet Air Force	mfd	may38	trf summ41	not known	ANT-42-1	MAP Factory # 22	trf	summ41	landing at Podlipki; repair completed 01aug37; underwent state trials 11aug37/28oct37; received 4 M-34FRNB engines and underwent joint state trials with them 06mar38/30apr38; received 4 M-34FRNV engines and underwent joint state trials with them 26sep38/26mar39; converted for service in the Arctic in 1940/41 (probably received diesel engines), but hand-over to Polyarnaya Aviatziya was prevented by the outbreak of the war; wings painted in red used by Factory No. 22 at Kazan for training from the outbreak of the war; dbr may43 when took off with locked diving-rudder and force-landed in a swamp close to the airfield, all crew and the sole (unauthorised) passenger escaped unhurt
42 1 1	not known	TB-7	Soviet Air Force	no	reports	line # 01-01; initially with M-34FRNV engines plus ATsN-2 turbo-charger; damaged on landing at Shcholkovo 30apr40 when the landing gear collapsed during the landing run; repaired; re-engined with AM-35A engines in spring 1941; opb 2 ae 14 tbpap at Borispol; w/o 22jun41 on the ground at Borispol when was destroyed by a German air raid						
42 1 2	"8" blue	TB-7	Soviet Air Force		1941	line # 01-02; initially with M-34FRNV engines plus ATsN-2 turbo-charger; re-engined with AM-35A engines in summer 1941; last reported with this code mar43						
	"9" blue	TB-7	Soviet Air Force		may43	trf to 890 ap dd 10jun42; reported without code in 1943; w/o 19aug43 on a bombing mission when engines Nos. 3 and 4 failed 50 minutes after take-off and caught fire, the crew bailed out and the aircraft crashed 55 km south-west of Kaluga, no casualties						
42 1 3	not known	TB-7	Soviet Air Force	mfd	jul40	line # 01-03; initially with M-34FRNV engines plus ATsN-2 turbo-charger; re-engined with AM-35A engines in summer 1941; opb 2 ae 14 tbpap at Borispol; w/o 22jun41 on the ground at Borispol when was destroyed by a German air raid						
42 1 4	." blue	TB-7	Soviet Air Force	mfd	15mar40	line # 01-04; initially with M-34FRNV engines plus ATsN-2 turbo-charger; opb 2 ae 14 tbpap at Borispol from summer 1940; by 432 dbap at Kazan from 18aug41 and by 433 ap at Kazan from at least 01oct41; underwent overhaul 04nov41/11jan42, re-engined with AM-35A engines; opb 746 ap dd from 11jan42						
	"2" blue	TB-7	Soviet Air Force			trf to 890 ap dd 10jun42; in olive drab/black camo c/s with light blue and later black undersides; carried a badge with a small polar bear dropping a bomb on the nose; seen Kratovo oct43; underwent its last overhaul 15oct43/14dec43; dbr 13jul44 on landing at Gomel after a bombing mission against ëaualiai when the flaps did not deploy, the aircraft touched down late, ran into into a bomb crater and ended up in a ditch, damaging wing, fuselage, engine nacelles and landing gear, 5 of the 12 crew seriously and the other 7 slightly injured; t/t 529 hours 48 minutes						
42 1 5	"3" blue	TB-7	Soviet Air Force	mfd	aug40	line # 01-05; initially with AM-35 engines; opb 5 ae 432 tbpap at Kazan from late summer 1941 (after repairs); re-engined with AM-35A engines, date unknown						
	"7" blue	TB-7	Soviet Air Force		feb43	trf to 890 ap dd 10jun42; dbr 31may43 on take-off for a bombing raid when the tail was hit by a Yak-7 of 429 iap PVO, no casualties						
42 1 6	not known	TB-7	Soviet Air Force	mfd	31mar40	line # 01-06; initially with M-34FRNV engines plus ATsN-2 turbo-charger; re-engined with AM-35A engines in summer 1941; opb 2 ae 14 tbpap at Borispol; reportedly w/o 01dec40 when crashed during a go-around at Borispol, 6 crew killed; later opb 432 dbap at Kazan and by 433 ap at Kazan from at least 01oct41						
42 1 7	." red not known	TB-7 TB-7	Soviet Air Force Soviet Air Force	r/r mfd	10jun42 29oct40 ?	remained with 746 ap dd 10jun42 (redesignated 25 ap dd 18sep43) line # 01-07; initially with AM-35 engines; later re-engined with AM-35A engines; opb 432 dbap; dbr 24oct41 on a bombing mission from Kovrov against Oryol when the crew lost orientation on return, mistook Yaroslavl for Ivanovo, the aircraft touched down too late and too far right, ran into a construction pit and broke up, all crew escaped unhurt						
42 1 8	"1" blue	TB-7	Soviet Air Force	mfd	jul40	line # 01-08; initially with AM-35 engines; operated initially by 14 tbpap at Borispol; opb 5 ae 432 tbpap (redesignated 746 ap dd 12dec41) at Kazan from late summer 1941 (after repairs); flew a bombing mission against Memel 28aug/01sep41; re-engined with AM-35A engines, date unknown; made a forced landing at Chkalovski 23apr42; trf to 890 ap dd 10jun42 (disbanded dec45); combat-ready by may45; converted after the end of WWII to, see next line						
42 1 9	not known "10" blue	Pe-8LL TB-7	Soviet Air Force Soviet Air Force	ph. mfd	1945 sep40	test-bed for trials of the ASn-82FN engine (built into the nose as the 5th engine); trf to GK NII VVS in 1946 line # 01-09; initially with AM-35 engines; later re-engined with AM-35A engines; opb 2 ae 14 tbpap at Borispol; w/o 22jun41 on the ground at Borispol when was destroyed by a German air raid						
42 2 0	not known	TB-7	Soviet Air Force	mfd	aug40	line # 01-10; initially with AM-35 engines; later re-engined with AM-35A engines; opb 2 ae 14 tbpap at Borispol; w/o 22jun41 on the ground at Borispol when was destroyed by a German air raid						
42 2 1	." blue	TB-7	Soviet Air Force	mfd	05oct40	line # 02-01; initially with AM-35 engines; later re-engined with AM-35A and then with ASH-82 engines; opb 4 ae 432 tbpap (redesignated 746 ap dd 12dec41) at Kazan; flew a mission against Germany 28/29aug41; f/n Yefremov 07sep41; trf to 890 ap dd 10jun42; trf to 362 ap dd 10jan44; overhauled and modernised in 1944; extant by may45						
42 2 2	not known	TB-7	Soviet Air Force	mfd	sep40	line # 02-02; initially with AM-35 engines; later re-engined with AM-35A engines; opb 4 ae 432 tbpap at Kazan; flew a mission against Germany 28/29aug41; damaged 13oct41 during a daylight bombing mission from Vsegodichi against Kaluga; w/o 16oct41 on take-off for a bombing mission from Ivanovo when the aircraft started to descend after having reached a height of some 50 metres (possibly the flaps had been retracted too early), crashed into a forest some 4-5 km from the airfield and exploded, 11 of the 12 crew killed and the sole survivor slightly injured						
42 2 3	not known	TB-7	Soviet Air Force	mfd	1940	line # 02-03; with AM-35A engines; opb 2 ae 14 tbpap at Borispol; w/o 22jun41 on the ground at Borispol when was destroyed by a German air raid						
42 2 4	no code	TB-7	Soviet Air Force	mfd	1940	line # 02-04; with AM-35A engines; opb 432 dbap at Kazan; probably in dark green c/s with light blue undersides; photo 1941; dbr 11oct41 (or 08nov41 ?) when the board technician allowed some tanks to run dry so that two engines on the same side stopped working, the pilot did not cope with the situation and worsened it by lowering the landing gear, the aircraft came down on a wood, no casualties						
42 2 5	"6" blue	TB-7	Soviet Air Force	mfd	30sep40	line # 02-05; initially with M-40 engines; r/o 01oct40; f/f 13oct40; underwent factory trials (11 flights) until 28dec40; re-engined with M-40F engines apr41 and h/o to the NII VVS, but no official trials conducted due to a multitude of technical problems; later re-engined with AM-35A engines; opb 2 ae 432 tbpap at Kazan; in two-tone camo c/s with light blue undersides						
	"8" red	TB-7	Soviet Air Force	r/r	10jun42	remained with 746 ap dd 10jun42 (redesignated 25 ap dd 18sep43); with Factory No. 22 for overhaul by may45						
42 2 6	"4" blue	TB-7	Soviet Air Force	mfd	1940	line # 02-06; with AM-35A engines; opb 432 ap; damaged 13oct41 during a daylight bombing mission from Vsegodichi against Kaluga; severely damaged 07nov41 on a bombing mission from Ramenskoye against Danzig when descended too early before crossing the front-line on the return flight and was damaged by German anti-aircraft artillery, with engine No 4 catching fire, when the fire engulfed the right wing the crew bailed out between Kashin and Kalyazin on the river Volga (7 of the 12 sustained injuries while landing) while the aircraft came down on auto-pilot in swampy terrain near Frolovskoye 20 km east of Kashin and was repaired on-site some weeks later						
42 2 7	." blue	TB-7	Soviet Air Force	mfd	20sep40	line # 02-07; initially with M-40 engines; re-engined with M-30 engines in spring 1941 and r/o as such 10apr41; h/o for trials to the NII VVS may41 and to the LII NKAP 10jun41; later re-engined with AM-35A engines; opb 746 ap dd						
42 01 5	." red no code	TB-7 TB-7	Soviet Air Force Soviet Air Force	r/r mfd	10jun42 18mar41	remained with 746 ap dd 10jun42; dbr 10jul42 line # 05-01; with AM-35A engines (the first Pe-8 with these engines); started state trials with the NII VVS 22mar41; also underwent trials with a make-shift cabin for 12 persons in the bomb-bay; opb 4 ae 432 tbpap (redesignated 746 ap dd 12dec41) at Kazan; in dark green c/s with light blue undersides; tail gun replaced by a cannon aug41; flew a bombing mission against Königsberg 28aug41/01sep41; flew a bombing mission from Monino against Königsberg 12/13nov41; photo at Monino 13nov41						
	"5" red	TB-7	Soviet Air Force	r/r	10jun42	remained with 746 ap dd 10jun42; dbr 28oct42 on landing at its home base Monino on return from a bombing mission when touched down too far left in heavy fog, ended up on the apron and ran into Pe-8 "9" blue c/n 42097 which was being prepared for a mission, 5 of the crew killed and 2 seriously injured; some parts of the wreck were used for the repair of c/n 42097						
42 02 5	"2" blue	TB-7	Soviet Air Force	mfd	1941	line # 05-02; initially with M-30 engines; later re-engined with AM-35A engines; opb 1 ae 432 tbpap at Kazan; damaged 10/11aug41 on a bombing mission from Pushkin against Berlin when was damaged by Soviet anti-aircraft artillery 30 km east of Tallinn, dropped its bombs into the Baltic Sea and returned to Pushkin; repaired; w/o 30oct41 on a bombing mission from Ramenskoye against Berlin when engine No. 2 failed near Neustettin on the flight to Berlin and engine No. 3 failed near Dvinsk on the return flight, when the aircraft ran out of fuel it force-landed on swampy terrain 15 km south of Boksikogor near lake Cherenkoye and was destroyed by the crew, 3 crew members injured						
42 03 5	"3" blue	TB-7	Soviet Air Force	mfd	02mar42	line # 05-03; initially with M-40F engines; later re-engined with AM-35A engines; opb 1 ae 432 tbpap (redesignated 746 ap dd 12dec41) at Kazan; damaged 10/11aug41 on a bombing mission from Pushkin against Berlin when engine No. 1 caught fire near Danzig, the fire could be extinguished but the aircraft lost height constantly so that the bombs had to be dropped on Lauenburg (370 km from Berlin) and the aircraft returned to Soviet-held territory, on the return flight engine No. 2 failed as well, but the aircraft was able to make an emergency landing at Obukhovo; dbr 29may42 during a test flight after repairs (the aircraft had been damaged by German anti-aircraft artillery during a bombing mission against Danzig 27/28may42) when took off being very low on fuel (the technician had forgotten to fill up the aircraft), the engines flamed out at a height of some 40-50 metres and the aircraft crash-landed in a forest, no casualties (the technician was court-martialled)						
42 04 5	"5" blue	TB-7	Soviet Air Force	mfd	1941	line # 05-04; with M-40F engines; opb 2 ae 432 tbpap at Kazan; w/o 10aug41 on a bombing mission from Pushkin against Berlin when was accidentally shot down by I-16 fighters of the Soviet Baltic Fleet over the mouth of the Luga river near Vysu shortly after take-off and crashed, 5 crew killed while 7 crew managed to bail out in time and survived						

42 05 5	"9" blue	TB-7	Soviet Air Force	mfd	05aug41	line # 05-05; with M-30 engines; underwent trials with the IJ NKAP at Kratovo (not completed); opb 3 ae 432 tbap (redesignated 746 ap dd 12dec41) at Kazan; flew a bombing mission against Berlin during the night 10/11aug41, suffering repeated engine failures during the return flight and hence running out of fuel (1 crew member died due to oxygen deficiency), made an emergency landing near a tractor depot at Borzeni (50 km north-east of Torzhok), was filled up using a bucket (which took 2 days) and returned to its base at Pushkin 12aug41; flew a bombing mission against Königsberg 28aug41/01sep41; flew a total of 6 bombing missions until dec41, more than any other TB-7 with M-30 engines
	"7" white	TB-7	Soviet Air Force	no	reports	opb 746 ap dd at Kazan; made 3 test flights feb42/mar42; w/o 21apr42 on a test flight to establish the reliability of the M-30 engines when engine No. 4 failed on finals to Kazan, but the pilot decided to go around, the aircraft lost speed during a turn, entered a spin and crashed, all 7 crew killed
42 01 6	"1" blue	TB-7	Soviet Air Force	mfd	1941	line # 06-01; with M-40F (or M-30 ?) engines; opb 1 ae 432 tbap at Kazan; dbr 11aug41 on a bombing mission from Pushkin against Berlin when engine No. 4 failed on the return flight over Rügen island, the aircraft was shot at by Soviet anti-aircraft artillery while crossing the coastal defence line and engine No. 3 failed soon after, the aircraft went out of control and crash-landed in a forest near Ropsha (Lomonosov district of the Leningrad region), 1 crew member injured
42 02 6	not known	TB-7	Soviet Air Force	no	reports	line # 06-02; with M-40F (or M-30 ?) engines; opb 3 ae 432 tbap at Kazan; w/o 11aug41 on a bombing mission from Pushkin against Berlin when it was damaged by German anti-aircraft artillery, had to drop its bombs and turn around, on the return flight engines Nos. 3 and 4 failed due to damaged oil pipes, the aircraft veered off course, crossed the Baltic Sea and crash-landed in a forest near Lapinjärvi (some 100 km north-east of Helsinki), 6 crew killed and the 5 survivors taken prisoner (only 2 of them survived WWII)
42 03 6	"8" blue	TB-7	Soviet Air Force	no	reports	line # 06-03; with M-40F (or M-30 ?) engines; opb 2 ae 432 tbap at Kazan; dbr 11aug41 on a bombing mission from Pushkin against Berlin when engine No. 4 was damaged by German anti-aircraft artillery near Stettin and the aircraft was further damaged by anti-aircraft artillery over Berlin and on the return leg near Königsberg and force-landed in a forest near Oru in German-occupied Estonia, the crew blew the wreck up, managed to cross the front line and returned to their unit at Pushkin 12aug41
42 04 6	"7" blue	TB-7	Soviet Air Force	no	reports	line # 06-04; with M-40F (or M-30 ?) engines; opb 3 ae 432 tbap at Kazan; w/o 10aug41 on take-off from Pushkin for a bombing mission against Berlin when engines Nos. 3 and 4 failed immediately after lift-off, the aircraft fell back to the ground and exploded, 6 crew killed
42 05 6	not known	TB-7	Soviet Air Force	no	reports	line # 06-05; with M-30 engines; undertook a test flight aug41; opb 432 tbap; w/o 13nov41 when crashed
42 06 6	"." blue no code	TB-7	Soviet Air Force	no	reports	line # 06-06; initially with M-30 engines; later re-engined with AM-35A engines; opb 746 ap dd
	"1" red	TB-7	Soviet Air Force	r/r	jun42	flew via Scotland and Iceland to Bolding Field at Washington, DC with Soviet Foreign Minister Vyacheslav Molotov on board 19/30may42 and back to Moscow 04/13jun42
42 07 6	"3" red	TB-7	Soviet Air Force	mfd	21oct41	remained with 746 ap dd 10jun42 (redesignated 25 ap dd 18sep43); w/o 07oct43 on take-off from Kratovo for a bombing mission when 2 engines failed, the crew released the bombs at low height, the aircraft was damaged by their explosions, caught fire, force-landed 2 km south of Bykovo and burnt out, no casualties
42 08 6	"." blue "." red	TB-7	Soviet Air Force	no	reports	line # 06-07; initially with M-30 engines; undertook a test flight aug41; later re-engined with M-35A engines; opb 1 ae 746 ap dd (redesignated 25 ap dd 18sep43); combat-ready by may45
		TB-7	Soviet Air Force	r/r	10jun42	line # 06-08; initially with M-30 engines; later re-engined with AM-35A engines; opb 746 ap dd remained with 746 ap dd 10jun42; w/o during the night 24/25aug43 on a bombing mission from Ramenskoye against Borovskoye airfield when the left wing was hit by German anti-aircraft artillery near Smolensk and exploded, 6 of the 11 crew killed while others managed to bail out, some of them were taken prisoner and at least 2 ended up with Soviet partisans
42 09 6	not known	TB-7	Soviet Air Force	mfd	01nov41	line # 06-09; with M-30 engines; probably opb 746 ap dd; made 8 test flights feb24/mar42; w/o 17mar42 on landing when lost speed during a turn and crashed; struck off charge 22aug42 as worn out (?)
42 10 6	not known	TB-7	Soviet Air Force	no	reports	line # 06-10; initially with M-30 engines; later re-engined with AM-35A engines; opb 746 ap dd; w/o 20jul42 on a bombing mission from Kratovo against Königsberg when entered a heavy thunderstorm, broke up at a height of some 4,000 metres and crashed near Shubino railway station (20 km north-west of Velikiye Luki), 8 crew killed and at least 3 survived
42 01 7	not known	TB-7	Soviet Air Force	mfd	01jul42	line # 07-01; with AM-35A engines; opb 746 ap dd; w/o 03may42 on return from a bombing mission in bad weather, flying at a height of some 200 metres below the clouds, when the wing hit telegraph lines during a turn and the aircraft crashed near Kovrovo (17 km south-west of Aleksin), 10 of the 11 crew killed
42 02 7	"9" red	TB-7	Soviet Air Force	no	reports	line # 07-02; with AM-35A engines; opb 890 ap dd; dbr 13sep42 when engine No. 2 caught fire after losing oil, the left wing caught fire as well and the aircraft made a forced landing near Igumiko (close to Ramenskoye), 2 crew killed
42 03 7	"2" blue	TB-7	Soviet Air Force	no	reports	line # 07-03; with AM-35A engines; trf to 890 ap dd 10jun42; w/o 13may43 when was shot down down by anti-aircraft artillery, 3 crew killed
42 04 7	not known	TB-7	Soviet Air Force	mfd	aut. 42	line # 07-04; with M-82 engines and early-type nose section; test aircraft for this engine type and the new tail-wheel; probably did not carry a code; underwent trials apr42/sep42; fate unknown (did not enter service with either 746 or 890 ap dd)
42 05 7	"2" red	TB-7	Soviet Air Force	no	reports	line # 07-05; with AM-35A engines and non-standard tail-turret; remained with 746 ap dd 10jun42 (redesignated 25 ap dd 18sep43)
	"6" red	Pe-8	Soviet Air Force		mar43	opb 25 ap dd; in green/khaki/black camo c/s with black undersides; i/n Balbasovo in early 1945; with Factory No. 22 for overhaul by may45
42 06 7	"7" red	TB-7	Soviet Air Force	mfd	22may42	line # 07-06; with AM-35A engines; remained with 746 ap dd 10jun42 (redesignated 25 ap dd 18sep43); extant by may45
42 07 7	"10" red	TB-7	Soviet Air Force	no	reports	line # 07-07; with AM-35A engines; opb 746 ap dd (redesignated 25 ap dd 18sep43); w/o 22oct43 on a bombing mission when engine No. 2 caught fire and the aircraft crashed 20 km north-west of Tula, number of casualties unknown
42 08 7	"4" blue	TB-7	Soviet Air Force	mfd	29jun42	line # 07-08; with AM-35A engines; opb 890 ap dd; damaged 06jul42 when nosed over on landing at night; repaired; dbr 13mar43 on return from a test flight after the change of all 4 engines when the fuel supply of engine No. 3 failed at a height of 6,300 metres, engine No. 2 started to vibrate at a height of 3,000 metres and engine No. 1 lost power at a height of 500 metres (all due to a mistake of the board technician), the aircraft made a forced landing in a forest near Yegoryevsk and suffered heavy damage, no casualties
42 09 7	"9" blue	TB-7	Soviet Air Force			line # 07-09; with AM-35A engines; opb 890 ap dd; damaged 28oct42 while being prepared for a mission at Monino when was hit by TB-7 "5" red c/n 42015 which had landed in heavy fog and ended up on the apron; repaired (using, among others, some parts of c/n 42015)
	"4" blue	Pe-8	Soviet Air Force		jul43	opb 890 ap dd; w/o in the late hours of 15sep43 after bombing positions of German heavy artillery at Bezzabotny (which pounded Leningrad) when was shot down by a night fighter of 1./NJG200 of the German Air Force (piloted by Oberleutnant Wolfgang Jank) and crashed 22 km south-west of Krasnogvardeisk, 7 crew missing in action while 4 crew returned to their unit (2 02oct43, 1 25oct43 and 1 27may45)
42 10 7	"4" red	TB-7	Soviet Air Force	ph.	feb43	line # 07-10; with AM-35A engines; opb 1 ae 746 ap dd; in green/light brown/dark grey camo c/s with light blue undersides; w/o 09feb43 on a bombing mission against the railway station Dno near Dmitrov when was attacked by a Yak-7 from 183 Iap (piloted by Sergeant Shchelokov) near Dyadkovo airfield, caught fire and crashed 300-400 metres from Orudyevo village, 1 of the 12 crew killed while 11 managed to bail out; t/t 302 hours 29 minutes and 78 cycles
42 01 8	"5" blue	TB-7	Soviet Air Force	photo		line # 08-01; with AM-35A engines; opb 890 ap dd; dbr 30aug42 on a bombing mission against Berlin when was damaged by German anti-aircraft artillery over Berlin and force-landed in Eastern Prussia when ran out of fuel, all crew missing in action; the wreck was intensively studied by the Germans; photo in the German Air Force magazine "Der Adler" dated 27oct42
42 02 8	"9" red	TB-7	Soviet Air Force	mfd	30jul42	line # 08-02; with AM-35A engines; opb 746 ap dd; in washed-out green/dark grey camo c/s with light grey spots and black undersides; damaged 24feb43 on a bombing mission when engine No. 3 failed, the aircraft returned to Kratovo, touched down too early and broke its landing gear, t/t 271 hours 31 minutes and 77 cycles by then; repaired; undertook some 60 combat missions oct42/apr43
	"5" red	Pe-8	Soviet Air Force	r/r	unknown	opb 746 ap dd (redesignated 25 ap dd 18sep43); w/o during the night 26/27jul44 on a bombing mission against Tilsit railway station when was shot down by German anti-aircraft artillery, 5 crew killed
42 03 8	"11" red	TB-7	Soviet Air Force	mfd	1942	line # 08-03; received M-30A engines sep42; underwent service trials with 45 tbad from nov42; probably opb 746 ap dd; flew its first combat mission feb43; extant by may45
42 04 8	"10" blue	TB-7	Soviet Air Force	mfd	18aug42	line # 08-04; with AM-35A engines; opb 890 ap dd; seen 16apr43; also reported without code; w/o 09jun43 when was shot down by anti-aircraft artillery, 6 crew missing in action
42 05 8	"14" red	Pe-8	Soviet Air Force	mfd	31jan43	line # 08-05; with M-82 engines and early-type nose section; the first production aircraft with this engine type; in green/black camo c/s with black undersides; toc feb43; opb 3 ae 746 ap dd; flew its first of a total of 43 bombing missions 24feb43 (against Gomel railway station); damaged 17mar43 when a wing spar broke during a training flight (t/t 69 hours by then), repaired until 16apr43; w/o during the night 20/21jul43 on a bombing mission against the German garrison at Oryol when was hit by German anti-aircraft artillery and the right wing caught fire, the aircraft managed to cross the front line before the right wing broke off and the aircraft crashed in a ravine 6 km north-east of Mtsensk, 5 of the 12 crew killed while 7 managed to bail out
42 06 8	not known	Pe-8	Soviet Air Force	mfd	01sep42	line # 08-06; with AM-35A engines; opb 890 ap dd; w/o 01dec42 on return from a bombing raid on Sychevo railway station when the de-icing fluid of propeller No. 3 caught fire, engine No. 3 was switched off, but the wing caught fire anyway and the aircraft force-landed in a forest, 8 crew killed
42 07 8	"6" blue	Pe-8	Soviet Air Force	mfd	06nov42	line # 08-07; with AM-35A engines; opb 890 ap dd; w/o 04may44 on a flight to test FOTAB-100-60 photo bombs, dropping them from a height of 2,000 metres, when the 4th bomb detonated immediately below the bomb bay, causing the aircraft to explode as well, 1 crew member killed
42 08 8	"4" red	Pe-8	Soviet Air Force	mfd	01dec42	line # 08-08; with AM-35A engines; the only Pe-8 with featherable propellers (VISH-61V); opb 746 ap dd (redesignated 1 ae 25 ap dd 18sep43); w/o 28jun44 when was shot down by anti-aircraft artillery, number of casualties not known
42 09 8	"3" blue	Pe-8	Soviet Air Force	mfd	23feb43	line # 08-09; with AM-35A engines; opb 890 ap dd; w/o during the late hours of 30mar44 when shot down by a night fighter of 4./NJG 100 of the German Air Force, all crew missing in action
42 10 8	"8" blue	Pe-8	Soviet Air Force	mfd	08jan43	line # 08-10; with AM-35A engines; opb 890 ap dd; w/o 05apr43 on take-off from Kratovo at night for a bombing raid on Gomel when the co-pilot did not hold the throttles tight on take-off so that the engines lost power and flames emerged from their exhaust pipes, when the captain saw the reflection of the flames in the river Moskva while crossing it at a height of some 15-20 metres he thought that the aircraft was on

42 01 9	"9" blue "11" blue "10" blue	Pe-8 Pe-8 Pe-8	Soviet Air Force Soviet Air Force Soviet Air Force	mfd	mar43 may43 jul43	fire and tried to land on the banks of the river, after running over the ground for 250 metres one of the FAB-500 bombs detonated and the aircraft was thrown into the air again, coming down after 500 metres, 6 crew killed line # 09-01; with AM-35A engines; the first production aircraft with the new tail wheel
42 02 9	"13" red	Pe-8	Soviet Air Force	mfd	apr43	opb 890 ap dd; w/o during the night 22/23jul43 when was shot down by a night fighter of Stab IV./NJG 5 of the German Air Force (piloted by Hauptmann Heinrich Prinz zu Sayn-Wittgenstein) 5 km south-east of Sechinskaya, 2 crew killed and 6 missing in action
42 03 9	"12" red	Pe-8	Soviet Air Force	mfd	19apr43	line # 09-02; initially with M-30A engines; underwent service trials with 746 ap dd from apr43; later re-engined with M-30B engines; dropped the first five-tonne bomb on Königsberg 29apr43; extant by may45
42 04 9	"15" red	Pe-8	Soviet Air Force	mfd	06apr43	line # 09-03; the penultimate Pe-8 with the early-type nose section; initially with M-30A engines; underwent service trials with 746 ap dd from apr43; later re-engined with M-30B engines; struck off charge 26dec45
42 05 9	"1" red "2" red	Pe-8 Pe-8	Soviet Air Force Soviet Air Force	mfd	27apr43 aug44	line # 09-04; with M-82 engines; the first Pe-8 with the new nose section; opb 746 ap dd; w/o during the night 20/21jul43 on a bombing mission when was shot down by a night fighter of Stab IV./NJG 5 of the German Air Force (piloted by Hauptmann Heinrich Prinz zu Sayn-Wittgenstein) north-east of Oryol, 10 of the 12 crew killed while 2 managed to bail out
42 06 9	"12" blue	Pe-8	Soviet Air Force	mfd	25apr43	line # 09-05; with ASH-82-211 engines; seen jun43 opb 1 ae 25 ap dd; extant by may45
42 07 9	"13" blue	Pe-8	Soviet Air Force	mfd	11may43	line # 09-06; with ASH-82-211 engines; opb 890 ap dd; w/o during the night 14/15jul43 when was down by a night fighter of Stab IV./NJG 5 of the German Air Force (piloted by Hauptmann Heinrich Prinz zu Sayn-Wittgenstein) west of Bolkhov, 7 crew killed
42 08 9	"11" blue	Pe-8	Soviet Air Force	mfd	15may43	line # 09-07; with ASH-82 engines; opb 890 ap dd; w/o 23jun43 when was shot down by anti-aircraft artillery, 6 crew killed and 4 missing in action
42 09 9	"2" red "14" red	Pe-8 Pe-8	Soviet Air Force Soviet Air Force	mfd	19may43 dec43	line # 09-08; with ASH-82 engines; seen oct43; extant by may45 line # 09-09; with ASH-82 engines; mfd also reported as 12may43
42 10 9	"14" blue	Pe-8	Soviet Air Force	mfd	02jul43	opb 25 ap dd; trf to 362 ap dd 10jan44; extant by may45 line # 09-10; with ASH-82 engines; opb 890 ap dd; w/o during the night 20/21jul43 when was shot down by a night fighter of Stab IV./NJG 5 of the German Air Force (piloted by Hauptmann Heinrich Prinz zu Sayn-Wittgenstein) north-east of Oryol, 3 crew killed
42 1 10	"7" blue	Pe-8	Soviet Air Force	mfd	12jul43	line # 10-01; with ASH-82 engines; opb 890 ap dd; probably it was this aircraft which was named 'Bugulminski Kolkhoznik' in honour of the collective farmers from Bugulma who founded its construction; w/o 29jun43 when crashed at Kratovo, 11 crew killed
42 2 10	"8" red no code	Pe-8 Pe-8	Soviet Air Force Soviet Air Force	mfd ph.	30jun43 feb44	line # 10-02; with ASH-82 engines; seen 10jul43; used to test various flame extinguishers at Kratovo sep43 opb 25 ap dd at Kratovo; named 'Kaibitski Kolkhoznik' in honour of the collective farmers who founded the construction of this aircraft; in green/khaki/olive drab camo c/s with black undersides; seen Kratovo feb44; extant by may45
42 3 10	"12" blue	Pe-8	Soviet Air Force	mfd	05jul43	line # 10-03; with ASH-82 engines; opb 1 ae 25 ap dd; seen 17aug43; reportedly wfu (or w/o) 27aug43; trf to 362 ap dd 10jan44; extant by may45
42 4 10	"1" red	Pe-8	Soviet Air Force	mfd	13aug43	line # 10-04; with ASH-82FN engines; opb 1 ae .. ap dd; extant by may45
42 5 10	"13" blue	Pe-8	Soviet Air Force	mfd	aug43	line # 10-05; with ASH-82 engines; opb 890 ap dd; w/o during the late hours of 27aug43 when was shot down by a night fighter of Stab I./NJG 100 of the German Air Force (piloted either by Hauptmann Rudolf Schönerdt or by Major Lange), 5 crew killed
42 6 10	"3" yellow	Pe-8	Soviet Air Force	mfd	23aug43	line # 10-06; with ASH-82 engines; mfd also given as 22aug43; opb 25 ap dd; trf to 362 ap dd 10jan44; extant by may45
42 7 10	"7" blue	Pe-8	Soviet Air Force	mfd	29sep43	line # 10-07; with ASH-82 engines; extant by may45
42 8 10	"8" blue	Pe-8	Soviet Air Force	mfd	08oct43	line # 10-08; with ASH-82 engines; extant by may45
42 9 10	"13" blue	Pe-8	Soviet Air Force	mfd	08oct43	line # 10-09; with ASH-82 engines; extant by may45
42 10 10	"15" red	Pe-8	Soviet Air Force	mfd	15oct43	line # 10-10; with ASH-82 engines; opb 25 ap dd; w/o in the late hours of 26feb44 when was shot down over Helsinki by two Bf 109G-6/R6 night fighters of 3./JG 302 of the German Air Force (probably those piloted by Oberfeldwebel Egbert Jaacks and by Feldwebel Dietrich Reiche), all crew missing in action presumed killed
42 1 11	"9" blue	Pe-8	Soviet Air Force	mfd	19oct43	line # 11-01; with ASH-82 engines; extant by may45
42 2 11	"14" blue	Pe-8	Soviet Air Force	mfd	18nov43	line # 11-02; with ASH-82 engines; opb 890 ap dd; w/o 28jun44 when was shot down by German fighters, no casualties
42 3 11	"9" red CCCP-N562	Pe-8 Pe-8	Soviet Air Force Polyarnaya Aviats.	mfd ph.	26dec43 25mar54	line # 11-03; with ASH-82 engines registration sometimes reported in error as CCCP-N556; reported with ASH-72 engines without turbo-charger as well as with ASH-82FN engines; trf probably in 1946; in grey c/s with orange upper wing and stabilizer surfaces; opb MAGON from 24jan51; transported Mi-1U CCCP-N1 belly-mounted in 1952; used to resupply the drifting polar stations SP-3 and SP-4 in 1954
42 4 11	"5" blue	Pe-8	Soviet Air Force	mfd	24dec43	line # 11-04; with ASH-82 engines; extant by may45
42 5 11	not known  CCCP-N396	Pe-8 Pe-8	Soviet Air Force Polyarnaya Aviats.	mfd ph.	08jan44 1950	line # 11-05; with ASH-82 engines and early-type nose section; opb 1 ae 25 ap dd; damaged 08jan44 on the delivery flight from Kazan to Kratovo when all 4 engines lost power on finals in heavy snowfall and only the engines Nos. 3 and 4 kept working, the aircraft was very difficult to control and crash-landed, destroying its landing gear, all 9 crew escaped unhurt; combat-ready by may45 with ASH-82FN engines and four-blade propellers; trf in spring 1946 (in document 10jun46, but not yet on charge by 10apr46); in all-orange c/s; assigned to the Arctic expedition "Sever-2" 26mar49; flew ice-reconnaissance missions 25apr49/05may49; used to resupply the drifting polar station SP-2 in 1950 and the Arctic expedition "Chaika" in early 1951; opb MAGON from 24jan51; struck off charge in 1954
42 6 11	"6"	Pe-8	Soviet Air Force	mfd	19dec43	line # 11-06; with ASH-82 engines; opb 25 ap dd; damaged on a bombing mission against Helsinki feb44 when a wing spar cracked; combat-ready by may45
42 7 11	"10" blue	Pe-8	Soviet Air Force	mfd	28dec43	line # 11-07; with ASH-82 engines; seen apr44; w/o 27jun44 (but also reported as extant by may45)
42 8 11	"16" red	Pe-8	Soviet Air Force	mfd	16feb44	line # 11-08; with ASH-82 engines; opb 25 ap dd (redesignated 203 ap 15dec45); took part in the Victory Parade in Moscow jun45; w/o 12sep45 on a positioning flight from Bykovo to Balbasovo when the spars of the left wing broke shortly after take-off and the wing came off, all 14 occupants killed
42 9 11	"10" red	Pe-8	Soviet Air Force	mfd	16feb44	line # 11-09; with ASH-82 engines; converted to a carrier aircraft for the rocket-powered experimental aircraft Bisnovat 5-1 and 5-2 in 1948; trials ended in 1949 as rocket-powered aircraft turned out to be without prospects
42 10 11	"15" blue	Pe-8	Soviet Air Force	mfd	1944	line # 11-10; with ASH-82 engines; extant by may45
42 1 12	"18" red CCCP-N395	Pe-8 Pe-8	Soviet Air Force Polyarnaya Aviats.	mfd MOW	13may44 05apr46	line # 11-01; with ASH-82 engines; opb 25 ap dd (redesignated 203 ap 15dec45); combat-ready by may45 the first Pe-8 of Polyarnaya Aviatsiya; trf probably in early 1946; opb Moskovskaya aviagruppa; damaged 09apr46 on a flight from Arkhangelsk to Khimki-Zakharkovo when was to divert to Izmailovo because of bad weather, but the pilot (I.I. Cherevichny) decided to land at Zakharkovo, on the second approach the Pe-8 collided with 2 parked aircraft (a Ya-6 and a Po-2) of Factory No. 82 of the MAP after a landing run of 41.0 metres; undergoing test flights at Kazan after repair by 10jan47; dbr 05jun47 on a flight from Dikson to Mys Kosisty when had to go around due to strong cross winds on landing at Mys Kosisty and engines Nos. 1 and 2 flamed out shortly afterwards (the flight engineer had made a mistake in handling the fuel system) so that the aircraft crash-landed in the tundra 1.5 km from the runway, suffering substantial damage, all 7 crew (pilot: I.I. Cherevichny) escaped unhurt; struck off charge 04aug47; the remains were recovered and flown to Monino by an Il-76 in 1979; was to be rebuilt but nothing came of this, the remains were probably scrapped in early 2000
42 2 12	"17" red	Pe-8	Soviet Air Force	mfd	1944	line # 12-02; with ASH-82 engines; opb 25 ap dd; combat-ready by may45
42 3 12	"19" red	Pe-8	Soviet Air Force	mfd	1944	line # 12-03; with ASH-82 engines; combat-ready by may45
42 4 12	"20" red	Pe-8	Soviet Air Force	mfd	03jun44	line # 12-04; with ASH-82 engines; combat-ready by may45; trf to GK NII VVS in 1946; used as a carrier aircraft for the Bisnovat 5-1 rocket plane
42 5 12	"21" red	Pe-8	Soviet Air Force	mfd	21jun44	line # 12-05; with ASH-82 engines; the last front-line Pe-8 built; opb 25 ap dd; w/o 02aug44 when was shot down by anti-aircraft artillery, 11 crew killed
42 6 12	not known  CCCP-N550	Pe-8ON Pe-8	Soviet Air Force Polyarnaya Aviats.	mfd no	dec44 reports	line # 12-06; with ACh-30B engines; VIP version; 1 of the 2 Pe-8ONs was handed over to 45 tbad while the other one was retained by NKAP modified to a transport and re-engined with ASH-82FN engines; opb Moskovskaya AGON by 1950; dbr 01may50 on a flight from Amerda to Dikson Island when touched down very hard 570 metres before the landing T (due to multiple crew error), bounced and came down very hard again 330 metres before the landing T, suffering substantial damage, all 8 crew (pilot: Boris N. Agrov) escaped
42 7 12	no code	Pe-8ON	Soviet Air Force	mfd	1944	line # 12-07; with ACh-30B engines; VIP version; probably in dark green c/s with black undersides; underwent factory trials at Kazan 25feb45/04mar45 and state trials with the NII VVS in spring 1945
42 8 12	not known	Pe-8	Soviet Air Force	mfd	1944	line # 12-08; with ACh-30B engines; underwent state trials; did probably not enter regular service
42 9 12	not known	Pe-8	Soviet Air Force	mfd	1944	line # 12-09; with ACh-30B engines; the last Pe-8 built; did probably not enter regular service

## Roks-Aero T-101 "Grach"

The T-101 was developed by Roks-Aero in co-operation with Aeroprogress, the aircraft design bureau of the Khronichev Space Corporation, to replace the good old An-2 in most of its roles. So it did not come as a surprise that its main Russian competitor was the An-3, a modernised An-2. On Western markets however, the "Grach" (means 'rook' in Russian) was to compete against the Cessna 208 "Caravan"; both types even look quite similar. Development of the T-101 started in September 1991 under chief designer Yevgeni Grunin, the internal designation of the type being izdeliye 33. In the basic version, the aircraft could carry nine passengers plus 600 kg of cargo or, as a freighter, 1,400 kg of cargo over a distance of up to 2,000 km. Another modification was to seat up to 15 passengers. Other planned versions were the T-101V float-plane (in co-operation with "Kangaroo" of Seattle), the T-101P fire-fighter on floats, the T-101S military patrol aircraft armed with machine-guns and rockets, and the T-101SKh "Rostok" (means 'sprout' in Russian) crop-sprayer. There were also plans for medevac, SAR, training and ecologic monitoring versions. Apart from that, the T-102 with a nose-wheel undercarriage (internal designation izdeliye 57) and the T-204 "Kondor" with two

Pratt&Whitney Canada PT6A-34 turboprops were to be built by the end of 1995, but later cancelled. A further development of the T-101 which remained on paper was the T-130 "Fregat" amphibian also powered by two PT6As, but in tandem configuration above the fuselage. The standard T-101 was powered by an TVD-10B turboprop, while the T-101V was to receive the more powerful TVD-20. The P&WC PT6A-65AR, the Garrett TPE331-14A (both in the version T-101E), the Lyulka AL-34 or the Saturn TVD-1500B were also planned to be fitted. Cruise speed of the "Grach" was 250 km/h and service ceiling 4,000 metres. The utility aircraft was able to operate from 350 metre long grass strips. Certification was to be along US FAR-23 requirements. It was planned to be completed by 2000, but the programme was delayed, and in the end the aircraft was never certified. The suggested price of the T-101 was around one million US dollars. Production was allocated to the Voronin Production Centre of RSK MiG at Moscow-Khodynka. The first prototype was completed there in late 1993 and performed its first flight on 7 December 1994. Ten pre-production aircraft were ordered in 1992; however, only four T-101s plus two static test airframes had been built by January 1997. The production line was idle for several years because of differences between RSK MiG and Roks-Aero. By 2008, "less than ten" aircraft had been built (including the two static test airframes), and 18 were waiting for completion on the assembly line. In the end, only three aircraft of the type took to the skies. Due to a combination of several factors the T-101 programme was shelved - as were many other programmes of the early post-Soviet period.

**Some 20 T-101 prototypes and production aircraft built by the Voronin Production Centre of RSK MiG at Moscow-Khodynka in 1993-2001**

---	no reg	T-101V	Roks-Aero	ZIA	15aug92	full-scale mock-up of the float-plane version; in all-white c/s with blue cheatline, no titles but 'T-101' on rear fuselage
001-T101	no reg FLARF01466 no reg	T-101 T-101 T-101	primer Fed of Light Avn no titles	mfd Tno Stu	late 93 03jun95 dec12	first prototype; f/f 07dec94 in white c/s with blue cheatline, no titles; l/n operational Lkhovitsy 21aug04; t/t more than 100 hours stored without markings at Stupino, f/n dec12, l/n with Russian flag on fin 18aug13, f/n with Soviet flag on fin 13oct13
002-T101	--	T-102	--			modified version with a nose-wheel undercarriage; basically completed, but never flew
003-T101	--	T-101	--			static test airframe; underwent trials with the TsAGI in 1995/2001
004-T101	--	T-101	primer	Stu	dec12	never completed; fuselage stored together with c/n 006 at Stupino, seen dec12/oct13
005-T101	RA-01777	T-101	North Express	BKA	21jun00	was never on the Russian register; seen in bare metal in the BASCO paint shop at BKA 16jun00 and rolled out from the BASCO paint shop 21jun00; in red/white/grey c/s with additional 'S.A. Chukotka' titles; f/f apr02 according to Pyotr Grunin; probably stored at Chukotka
006-T101	--	T-101	primer	Stu	dec12	never completed; fuselage stored together with c/n 004 at Stupino, seen dec12/oct13
007-T101	--	T-101	--			dynamic test airframe for fatigue trials
008-T101	RA-02555	T-101	North Express	BKA	15aug01	was never on the Russian register; c/n painted on the fin as '008'; in red/white/grey c/s with additional 'S.A. Chukotka' titles; f/f may03 according to Pyotr Grunin; l/n PWE 28jul03; probably stored at Chukotka
01 01	--	T-101	primer			just surmised
01 02	--	T-101	primer			just surmised
01 03	--	T-101	primer			just surmised
01 04	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 05	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 06	--	T-101	primer			just surmised
01 07	--	T-101	primer			just surmised
01 08	--	T-101	primer			just surmised
01 09	--	T-101	primer			just surmised
01 10	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 11	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 12	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 13	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 14	--	T-101	primer	Kho	2011	on the assembly line, abandoned
01 15	--	T-101	primer	Kho	2011	on the assembly line, abandoned

***Roks-Aero T-108/T-208 "Oryol"***

The "Oryol" (means 'eagle' in Russian) was also developed in co-operation with Aeroprogress. Its design was based on the T-101, and the project had been designated T-108 before being renamed T-208 later. The aircraft could carry 14 passengers or two tonnes of cargo over a distance of up to 1,600 km; its configuration could quickly be changed from passenger to cargo version. Apart from that, the "Oryol" may be modified for medevac, parachuting, aerial photography and patrol. The prototype was to be powered by two Pratt&Whitney Canada PT6A-34 turboprops, but production aircraft may also have been fitted with Czech Walter M-601E turboprops. The T-208 was quite simple, and maintenance would have been easy even under field conditions. The landing gear was not retractable, but it enabled the rugged aircraft to operate from grass strips. The cabin was not pressurised, so the service ceiling was limited to 3,000 metres. The price tag of the aircraft was estimated at two million US dollars. The first flight of the "Oryol" was planned for 2000, but probably never took place.

**1 T-208 prototype built by MAPO im. Dementyeva (former Factory # 30) at Moscow-Khodynka**

---	RA-93108	T-108	Roks-Aero, n/t	Kho	22may94	prototype or full-scale mock-up ?; not on Russian register; in all-white c/s with blue/white/red cheatline
---	RA-99208	T-208	Roks-Aero, n/t	ZIA	15aug01	probably just a full-scale mock-up, the same one as above ?; not on Russian register; in all-white c/s with blue/white/red cheatline; hulk without wings seen at an unknown location dec10 and at Frunze may12

***Shcherbakov Shche-2***

The Shche-2 was a light multi-purpose transport aircraft powered by two M-11D engines which was to bridge the gap between the smaller U-2 (Po-2) and the larger PS-84 (Li-2). It could carry up to 14 soldiers, 9 para-troopers or 9 stretchers, but was mostly used for cargo flights, for example transporting bulky loads as aero engines to airfields close to the front. The type also served for the training of navigators and radio operators and for para-dropping. Design started in December 1941 (as the TS-1, transportny samolyot 1), and the first flight took place in early February 1942. 567 Shche-2s were built by Factory No. 47 at Chkalov (now Orenburg) from 1944 to 1946 - 222 in 1944, 285 in 1945 and 60 in 1946. Most of them were delivered to the Soviet Air Force where they soldiered on until 1950. A certain number were transferred to Aeroflot after the war, they served for example with the Northern directorate at Arkhangelsk.

The Polish Air Force received 5 Shche-2s, with the first of them being delivered to 13. SPLT (Samodzielny Pulk Lotnictwa Transportowego - Independent Transport Aviation Regiment) in February 1945, it remained with that unit until May 1945. The next two were delivered to 15. SZPL (Samodzielny Zapasowy Pulk Lotniczy, Independent Reserve Aviation Regiment) in March 1945 and remained with that unit until July 1945. The final two were delivered to the WSP (Wojskowa Szkoła Pilotow, Military Pilots School) at Deblin also in March. By August 1945 all 5 aircraft served with the school, of which only 2 remained by November 1946 as 3 had been badly damaged by a storm in autumn 1946 and had to be withdrawn from use. By July 1947 only one aircraft remained, and that one was also gone by November 1947. The Yugoslav Air Force received six Shche-2s in 1945, one of which later made it to the civil register. The others were probably withdrawn from use by the early 1950s. The construction number consisted of the two-digit number in the batch, the one or two-digit batch number and the factory code 47.

**1 TS-1 prototype built by Factory No. 482 at Moscow-Vladykino in 1942**

---	no code no code	TS-1 TS-1	Shcherbakov OKB Soviet Air Force	f/f trf	feb42 jul42	probably in grey c/s with dark cheatline and trim on the nose; underwent state trials with NII VVS jul/aug42; trf to Factory No 47 as a pattern aircraft for series-production
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**567 Shche-2 built by Factory No. 47 at Chkalov (now Orenburg) from 1944 to 1946**

03	1 47	not known	Shche-2	Soviet Air Force	mfd	1944	one of five aircraft of the first production batch which were completed jan/feb44; underwent state trials with NII VVS in spring 1944
08	1 47	CCCP-I659	Shche-2	NKAP	rgd	26apr44	
08	2 47	not known	Shche-2UTS	Soviet Air Force	mfd	1944	version for the training of navigators, converted from a standard Shche-2 by Factory No. 482; underwent state trials with NII VVS oct44, but the trials were stopped after 10 days
12	2 47	CCCP-I666	Shche-2	NKAP zavod # 500	rgd	17may44	
11	5 47	not known	Shche-2UTS	Soviet Air Force	mfd	1944	version for the training of navigators, converted from a standard Shche-2 by Factory No. 47 in co-operation with the 2nd Chkalov Aviation School; underwent state trials with NII VVS nov44
13	9 47	not known	Shche-2	Soviet Air Force	d/d	1945	in fact Polish Air Force; opb Wojskowa Szkoła Pilotow at Deblin
15	9 47	not known	Shche-2	Soviet Air Force	d/d	1945	in fact Polish Air Force; opb Wojskowa Szkoła Pilotow at Deblin
18	9 47	"3" yellow	Shche-2	Soviet Air Force	d/d	1945	in fact Polish Air Force; opb 4. Eskadra Szkolna Wojskowa Szkoła Pilotow at Deblin; in dark green/ochre camo c/s with light blue undersides, with Red Stars in all positions plus a Polish 'szachownica' on the nose; photo 1945
51	9 47	not known	Shche-2	Soviet Air Force	d/d	1945	in fact Polish Air Force; opb Wojskowa Szkoła Pilotow at Deblin
61	9 47	not known	Shche-2	Soviet Air Force	d/d	1945	c/n stencilled on the fuselage under the cockpit as '061947'; in fact Polish Air Force; opb Wojskowa Szkoła Pilotow at Deblin
17	17 47	CCCP-I...	Shche-2	NKAP zavod # 32	mfd	25may45	w/o 23may46 (pilot: I.I. Velikorad)
01	19 47	not known	Shche-2	AFL/Kazakhstan	mfd	jun45	probably did not carry a registration or code; opb 267 AOSP; dbr 20nov45 on the return leg of a flight from Alma-Ata to Panfilov (now Zharkent) when encountered freezing rain and icing, the crew opted for a precautionary landing at Chilik, but the aircraft lost height due to the icing and came down in a fruit orchard 1 km from Chilik airfield, all 3 crew and both passengers escaped unhurt

42 20 47	not known	Shche-2TM	Soviet Air Force	mfd	1945	powered by two higher-rated M-11FN engines; tested with different propellers by NII VVS, but did not undergo state trials as it had not undergone static tests
02 21 47	no serial	Shche-2	Yugoslav Air Force	d/d	aug45	opb 1 transportni puk; w/o 05sep45 (before a serial could be assigned) when crashed on take-off from Zagreb
03 21 47	7101	Shche-2	Yugoslav Air Force	d/d	aug45	opb 1 transportni puk
	YU-CGN	Shche-2	ZSH	rgd	1955	CoFR # 104; opb AK Zagreb; canx 26nov56
04 21 47	7102	Shche-2	Yugoslav Air Force	d/d	aug45	opb 1 transportni puk
05 21 47	7103	Shche-2	Yugoslav Air Force	d/d	aug45	opb 1 transportni puk
06 21 47	7104	Shche-2	Yugoslav Air Force	d/d	aug45	opb 1 transportni puk
07 21 47	7105	Shche-2	Yugoslav Air Force	d/d	aug45	opb 1 transportni puk
---	CCCP-1721	Shche-2	NKAP zavod # 387	ph.	1945	in dark green/medium grey (AMT-11/AMT-12) camo c/s with light blue (AMT-7) undersides, with Red Stars in all positions; w/o or w/u 13jun46
---	CCCP-X687	Shche-2	AFL/Northern	ph.	late40s	originally opb Glavryba; took part in hunting expeditions and transported fresh fish to Arkhangelsk in 1945/48; photo at Ruchiyi (Mezen district, on the White Sea), probably in natural metal c/s with hi-viz trim
---	not known	Shche-2	Shcherbakov OKB	mfd	1945	powered by two diesel engines; underwent factory trials jul45
---	not known	Shche-2	Shcherbakov OKB	mfd	1945	civil version for 6-9 passengers; powered by two M-11D engines; underwent trials with AFL/NII GVF in mid-1945
---	not known	Shche-2	Gidrometsluzhba	no	reports	opb 37 osao YaU GMS (37th independent composite aviation detachment of the Yakutian Directorate of the Hydrological and Meteorological Service); both engines were written off 06apr48 as having manufacturing defects
---	not known	Shche-2	Soviet Air Force	no	reports	had to make a forced landing near Vyazma in autumn 1944 (on a flight from Kaunas to Moscow) when one engine failed (the pilot was Mark L. Gallai and one of the passengers the poet A.T. Tvardovski)

## Tekhnoavia SM-92 "Finist"

Named after the main character from a Russian fairy tale (Finist, the Shining Falcon; a story about a young man turned into a falcon by an evil sorceress because he refused her advances or just of the spite, and his lady love had to go to great lengths to break the spell and turn him back into human form), the seven-seat SM-92 could be called the Russian answer to the de Havilland Canada DHC-2 Beaver.

Designed by a newly-established company led by the talented engineer Vyacheslav P. Kondratyev (who had worked for Sukhoi, and before that for Yakovlev), the SM-92 (for samolyot mnogotsel'evoi, i.e. multi-role aircraft, designed in 1992) was developed in just 18 months, the prototype making its first flight on 29 December 1993.

In 1995, the aircraft entered small-scale production at the Smolensk aircraft factory, and the Smolensk factory has built 26 SM-92 until late 2007, among them 5 SM-92T.

An armed patrol version, the SM-92P, was brought out for the Russian Federal Border Guards (FPS) in 1995, but series-production was not achieved. Only one standard SM-92 was delivered to the FSB in 2005.

The c/n is embossed on two small metal plates found on the tips of the stabilizers (beneath the elevator horn balance); thus it is quite tricky to read if the control surfaces are secured by clamps while the aircraft is parked. The first two digits are the batch number and the next three the number of the aircraft in the batch.

### **SM-92 Finist built by SmAZ (former Factory # 475) at Smolensk from 1993**

#### Variants

SM-92 Finist Basic version, powered by 270 kW (360 hp) Vedeneyev M14P radial engine.

SM-92P Finist Armed version for Border guard duties. Two fixed forward firing PK machine guns and one inside cabin firing through open cabin doors and two rocketlaunchers.

SM-92T Turbo Finist Version powered by Walter M601 turboprop engine.

SMG-92 Turbine Finist Walter M601 powered version built in Slovakia by Aerotech Slovakia.

00 001	RA-44482	SM-92		f/f	28dec93	first prototype, blue/red/white c/s; f/n Moscow-Tushino 16apr97; l/n Moscow-Tushino 19may99; converted to SM-92T; f/n ZIA 23aug03; l/n GDZ 04sep04
00 002	--	SM-92			1994	static test airframe ?
00 003	RA-44484	SM-92		mfd		the second prototype; c/n checked; in blue c/s with yellow trim; f/n SXF 01jun94; l/n Gypmie (Australia) 02apr04; converted to an SMG-92
	HA-NAH	SMG-92	Tréner Kft.	rgd	16jan07	owned by Wingglider Ltd. of Leeds (UK); in blue c/s with yellow trim, no titles; ferried for use by Skydive Spain to Bollullos de la Mitación-La Juliana (near Seville) 10feb07; seen Gurnsey 07sep11; dbr 01jul12 on take-off from Bollullos de la Mitación-La Juliana when had to abort, crashed into a fence and impacted trees at the airfield boundary; t/t 2,575 hours; wreckage stored at Hibaldstow (UK) by mar14; still current on register 07dec16
00 004	RA-44485	SM-92		Crn	30jun95	c/n confirmed; sold to Mike Crymble UK, 21jan95; in blue c/s with yellow trim ; l/n Shoreham 05sep99; photo Samedan 2000; converted to SMG-92 in 2001
	HA-YDG	SMG-92	Berry R. Peter	rgd	09apr01	in blue c/s with yellow trim; crashed on approach Thiene, Italy, 03feb02; c/n confirmed; photos of wrecked fuselage exist taken in hangar at BTS ?
00 005	RA-44487	SM-92		Tno	09may95	red/yellow c/s; c/n checked Moscow-Tushino 07jun95; sold to Sport Para Centrum, Antwerp, 06jun97 (RA-44486 is not an SM-92 but an SM-94, a modified Yak-18T !); l/n Oberschleissheim 11jun03
01 001	RA-44493	SM-92P		ZIA	24aug95	first prototype of the armed patrol version; in camo c/s; c/n suffixed by 395 (mfd mar95 ?)
01 002	RA-44494	SM-92P		Tno	16apr97	second prototype of the armed patrol version completed by 1997; in camo c/s; l/n Moscow-Tushino 14may99
	LA-44494	SM-92P		Kci	01jun02	still in camo c/s
	RA-3057K	SM-92		no	reports	registration mentioned in Hungarian register and later used by a Yak-52
	HA-YDK	SMG-92	Jet-Stream 2004	mfd	may05	owned by Pyriandia Boogie of Pakosc (Poland); rgd 04may05; in yellow c/s with blue trim, no titles; f/n BTS 04may05; l/n Piotrków Trybunalski 05may15; current on register 07dec16, with a current CoFA
01 004	HA-YDL	SMG-92	G-92 Ker. Kft.	mfd	2005	offered for sale by Intracom General Machinery apr05, located in Switzerland; rgd 18aug05; in white c/s with light blue belly and 'wave' cheatline, no titles; possibly based at BTS; f/n BTS 04may05; l/n BTS 21mar06
	RF-92985	SMG-92	no titles	Sms	02may06	registration without dash; in white c/s with dark blue belly; based at Bolshoye Gryzlovo and seen there enginesless and with a canibalized cockpit 09mar12; still as such and c/n checked Bolshoye Gryzlovo 07sep12
01 005	HA-YDF	SMG-92	Tréner Kft.	mfd	2000	owned by Wingglider Ltd. of Bradford (UK); rgd 02nov00; in light blue/dark blue c/s with white cheatline and trim, no titles; photo in early 2001; f/n JER 21apr05; damaged 18feb07 on take-off from Hibaldstow (UK) when the pilot lost directional control during the take-off roll and the aircraft ground-looped, resulting in damage to the tail drag strut and empennage, the pilot and all 7 passengers escaped unhurt; repaired and f/n active again Lyneham 10may09; l/n Hibaldstow 15aug12; current on register 07dec16, with a current CoFA
01 007	HA-YDH	SMG-92	Jet-Stream 2004	mfd	2001	owned by Margherita S.R.L. of Vicenza (Italy) and operated for PB Aircraft; rgd 08oct01; in all-white c/s with 'Skydive Thiene' titles; f/n Samedan 03jan03; l/n Thiene 26jul15; current on register 07dec16, with a current CoFA
01 009	HA-YDI	SMG-92	Jet-Stream 2004	mfd	2003	owned by Simpron Air A.S.D. of Viganella (Italy); rgd 13feb03; possibly initially opb Logistic Air S.R.L.; operated for Accademia di Paracadutismo "Area Delta 47" at Casale Monferrato (Piedmont); in red c/s with white trim and a 'shark mouth', no titles; l/n in Hungary 18dec09; current on register 07dec16, with a current CoFA
01 010	RA-2192K	SM-92	Tekhnoavia	mfd	feb96 ?	c/n checked as 01 010 0296, mfd feb96 ?; f/n Smolensk-Severnoy 18aug03; with float landing gear (non-amphibious); l/n ZIA 23aug03
	RA-2192K 07210	SM-92	FLA Rossii	SVX	21aug05	photo
	RA-0721G	SM-92	V.P. Mironov	rgd	02dec09	c/n not confirmed; no external marks just '07210' in the cockpit and probably the same aircraft as RA-0721G; advertised for sale sep09 t/t 204 hours and 190 cycles
01 011	HA-YDN	SMG-92	Jet-Stream 2004	mfd	2003	in register as YeEVS.02.0194; rebuild date 01jan03; based at Karablino; in white/blue c/s with yellow trim, no titles; f/n Aramil-Uktus 09aug08; CoFA expired 27jun08; l/n Aramil-Uktus 28aug08; current on register aug10; converted to SM-92T; photo circa aug11 at Shilovo-Krutitsy, in all white c/s with black engine cowling; advertised for sale sep14 for \$750,000; photos, in white c/s with red and black trim, '01010' from a photo of the plate
02 001	HA-YDJX	SMG-92	bare metal	mfd	2004	owned by Finist S.C. of Gliwice (Poland); rgd 15jul03 to G-92 Kereskedelmi; in all-red c/s, no titles; f/n Ploesti-Strejnec 12jul06; l/n Przywidz 15sep16; current on register 07dec16, with a current CoFA
	HA-YDJ	SMG-92	Jet-Stream 2004	rgd	01nov04	photo on a test flight
						in register as c/n 01001, but c/n checked as 02001 several times; owned by Peter R. Berry of St. Moritz (Switzerland); in olive drab c/s with an unknown logo, no titles; f/n BTS 31mar06; l/n Tököl 22apr08; dbr 29aug15 on take-off from Casale Monferrato (Piedmont) when the engine failed during initial climb and the aircraft hit a hedge and some trees before coming to rest in a wooded area behind the runway threshold, pilot and all 10 passengers injured (some of them seriously); still current on register 07dec16; fuselage only seen dumped in a compound near the fuel pumps at Hradec Králové 22jul17
02 003	HA-YDM	SMG-92	Jet-Stream 2004	mfd	2009	owned by SGB Leasing Sp. z o.o. of Poznan (Poland); rgd 16jul09; in white c/s with red nose and fin, black/white checkerboards in front of the cockpit and on the tail and initially 'Heritage of Flying Legends' titles; already f/n Prague-Letnany 22may09; c/n checked FDH 08apr10; f/n without titles Hradec Králové 10may13; l/n POZ 14jun15; current on register 07dec16, with a current CoFA
02 005	RF-01219	SM-92T	Chelavia	mfd	jul97 ?	c/n checked as '02 005 0797' (mfd jul97 ?); in white c/s with red and black trim, with titles; f/n ZIA 15aug03; on amphibious landing gear for some time; l/n Chelyabinsk-Kalachovo 25feb08; t/t 500 hours by aug08
	RA-0257G	SM-92T	Chelavia	rgd	12feb09	in register as YeEVS.02.0377, mfd given as 30jan09; owned by O.V. Vasilyev; in white c/s with red and black trim, with titles; f/n Kolonna-Korobcheyevo 16aug09; w/o 13dec09 on a paratrooping flight from Chelyabinsk-Kalachovo when entered a spin while climbing (reason unknown) and crashed on the Yetkul road (6 km from Korkino and 12 km from Chelyabinsk) shortly after take-off, pilot and all 7 passengers killed

02 006	"255" black	SM-92T	FSB	ZIA	15aug05	c/n checked as 02 006 0804 = mfd aug04 ?; h/o in 2005; reportedly based in the Northern Caucasus; in grey c/s with 'Russian flag' cheatline and trim, no titles; l/n ZIA 20aug05
02 010	RA-0686G	SM-92T	SmAZ ?	mfd	20mar07	c/n checked as 02 010 1005; in grey c/s with 'Russian flag' cheatline and black trim, no titles; f/n ZIA 21aug07
	"304"	SM-92T	SibNIA	trf	26mar12	put on the experimental aviation register 05apr12; advertised for sale by jun15, mfd from the for sale document
03 001	RF-92988	SM-92T	FSB	mfd	2007	opb military unit 2378 at Yoshkar-Ola-Danilovo; in grey c/s with 'Russian flag' cheatline and trim, no titles; tender for repair published 13jun08; l/n Chelyabinsk-Shagal 03mar12;
	"301" blue	SM-92T	SibNIA	trf	28dec11	put on the experimental aviation register 05apr12; in grey c/s with 'Russian flag' cheatline and trim, no titles
03 002	RF-92989 not known	SM-92T	FSB	mfd	2006	rgd 12sep08
		SM-92T	SibNIA	trf	26dec11	put on the experimental aviation register 05apr12
03 003	RF-92990 not known	SM-92T	FSB	mfd	2008	rgd 28nov08; in grey c/s with 'Russian flag' cheatline and trim, no titles; f/n 29may10
		SM-92T	SibNIA	trf	26dec11	put on the experimental aviation register 05apr12
03 004	no reg	SM-92T	bare metal	f/f	12aug15	photo and data from Orbis Avia website; see "254" red, which was also seen the same date unmarked at ZIA
	OK-PRA	SM-92TE	Praga Export	rgd	20jul16	first aircraft assembled in Czechia by Orbis Avia as the SM-92TE Praga Alfa with GE H80 Turboprop; opb Xair s.r.o.; f/f 08mar17 from Hradec Králové, in blue and white c/s; seen PED 04jun17; based at Hradec Králové, l/n there 22jul17
07 003	RA-44512	SM-92	Avialine	ZIA	17aug99	in red/white c/s with titles; c/n checked 20aug99, the second digit seems to be out of sequence and the c/n plate was suffixed '101098', which might be the manufacture date 10oct98 ? probably the same aircraft as seen below; possibly this is c/n 03004 - with f/f the same date ?
	no reg	SM-92T	bare metal	ZIA	12aug15	
	"254" red	SM-92T	bare metal	ZIA	sep15	
	RA-0729G	SM-92 ?	SDL-Tver	rgd	04mar08	in register as "Finist-004" YeEVS.02.0161; rebuild date 01jan04; current on register aug10
	RA-0740G	SM-92T	Russian Federation	mfd	23apr07	in register as YeEVS.02.0222; rgd 05jul07; based at Smolensk-Severnoy; CofA expired 01jul08; current on register aug10
	RA-0888G	SM-92	Spetsialny TTs	mfd	17jun06	in register as YeEVS.02.0312; rgd 15feb08; CofA expired 06apr10; current on register aug10; f/n Pushkin aug12, in multi blue/black and white c/s, no titles, has an additional flat fairing on the side of the rear fuselage; in the same c/s as SM-92T "257" black; canx between 07jun17 and 04jul17
	07210	SM-92	no titles	photo		no external marks just '07210' in the cockpit and probably the same aircraft as RA-0721G; advertised for sale sep09 t/t 204 hours and 190 cycles
	RA-1241G	SM-92T		no reports		in register as YeEVS.07.0012; rgd 05jul07; based at Smolensk-Severnoy;
	RF-00335	SM-92T		Stu	09jul05	white c/s with red and black trim; l/n Bolshoye Gryzlovo 17oct10
	49423	SM-92T	bare metal	ZIA	01jun16	with serial in red on the port side only
	"257" black	SM-92T	FSB	Pus	apr12	has an additional flat fairing on the side of the rear fuselage; in multi blue/black and white c/s, no titles; in the same c/s as SM-92 RA-0888G; l/n Pushkin aug12
	LA-0447	SM-92	Agro-Soyuz	Dnm	summ'04	l/n Dnipropetrovsk-Maiskoye 02nov08; in all-blue c/s, yellow trim with titles
	UP-SM921	SM-92	Feniks	no reports		based at Kokshetau; mentioned in a document of the Astana Transport Procuracy 30jun10 as having been operated for 5 years already
	no reg	SM-92T	bare metal	ph.	apr07	at TsAGI, Moscow (probably Zhukovski) undergoing structural tests
	not known	SM-92T	Transavia	no reports		w/o 13feb99 on a ferry flight from Smolensk to Voronezh when encountered adverse weather and crashed near Droskovo (Orjol region), all 4 occupants (2 pilots and 2 engineers from the Voronezh engine factory) killed; some sources reported this as c/n 00002, but this seems to be incorrect

The RA-444.. registration series doubles with a batch of Yak-18T registrations of which some still were current 2000 and as such possibly explaining the jumps in registration sequence.

## Tekhnoavia "Rysachok"

The "Rysachok" (little chestnut horse) was a twin-engine aircraft designed by Vyacheslav Kondratyev and built by TsSKB "Progress" at Samara (the former Factory # 1 which had not built any aircraft for 50 years). The "Rysachok" was powered by two Walter M-601F turboprops and could carry 10 passengers or 1.5 tonnes of cargo over distances of up to 2,000 km. The only version built was a multi-engine trainer for civil aviation flying schools, but the plans also foresaw the development of a passenger version, a paratrooper version, a patrol version, an ambulance version (for 6 stretchers) and even a crop-sprayer version. The first flight took place on 3 December 2010, but then the programme ended up as so many others after the break-up of the Soviet Union. The schedule was not met (partially due to changed technical requirements) and certification was never achieved. Tekhnoavia, TsSKB "Progress" and the UVAU GA civil aviation flying school tried to settle their differences in court and the contract for the development and production of the "Rysachok" was eventually annulled on 10 May 2012.

### **5 "Rysachok" prototypes built by TsSKB "Progress" (former Factory # 1) at Samara-Bezymyanka in 2010/11**

00-01	no reg	Rysachok	Tekhnoavia	f/f	03dec10	first prototype; initially in primer, l/n as such Samara-Bezymyanka 12jan11; repainted in silver c/s with white top and blue/white/red cheatline, f/n as such Samara-Bezymyanka 18jan11
	"777" red	Rysachok	Tekhnoavia	ZIA	03jun11	in silver c/s with white top and blue/white/red cheatline, no titles; factory trials completed 02jun11; arrived for certification trials at Zhukovski 03jun11; l/n ZIA 18aug11
00-02	--	Rysachok	Tekhnoavia	Sae	2009	static test airframe; in primer; fuselage completed sep09; underwent trials with TsAGI from summer 2010
00-03	"778" black	Rysachok	Tekhnoavia	f/f	jun11	second prototype; seen in primer ULY 08jul11
	"778" red	Rysachok	Tekhnoavia	ULY	22jul11	pointed up 08/22jul11; in silver c/s with white top and blue/white/red cheatline, no titles; arrived for certification trials at Zhukovski 23jul11; l/n ZIA sep13, active
00-04	--	Rysachok	Tekhnoavia			dynamic test airframe for fatigue trials; completed sep11
00-05	"779" yellow	Rysachok	Tekhnoavia	f/f	2012	third prototype; f/n ZIA 28aug13, in fake Russian Air Force colours (medium green/light grey camo c/s with light grey undersides) with 'VVS Rossii' titles and Red Stars; l/n ZIA 31aug13

## Tsybin Ts-25

The Ts-25 was a cargo glider which could carry 25 fully equipped soldiers or 2.2 tonnes of cargo. The sole unit equipped with the Ts-25 was the glider regiment based at Tula-Myasnovno which received its aircraft in July 1948. Its greatest achievement was the flight of two Ts-25s (towed by two Il-12s) from Tula to the North Pole and back from 11 March to 11 May 1950 (circling the Pole on 7 April). Two Ts-25s were exported to Czechoslovakia where they were designated NK-25.

### **251 Ts-25 built by Factory No. 47 at Chkalov (now Orenburg) from 1947 to 1949**

---	D-41	Ts-25	Czechoslovak AF	toc	1952	opb 4 dlp at Prague-Kbely; in dark green c/s with light blue undersides; struck off charge apr56
---	D-42	Ts-25	Czechoslovak AF	toc	1952	opb 4 dlp at Prague-Kbely; in dark green c/s with light blue undersides; struck off charge apr56

## Yermolayev Yer-2

The Yer-2 (initially designated DB-240 for 'long-range bomber of OKB-240') was a medium bomber the design of which was based on the Bartini Stal-7 prototype airliner first flown in 1937. Preliminary design of the DB-240 was completed by the beginning of 1939, and the construction of two prototypes began the following July. The bomber retained little apart from the general layout of the Stal-7 as the structure was almost completely redesigned. The pilot's cockpit was offset to the left to improve his downward view and the navigator/bomb aimer sat in the extensively glazed nose, the radio operator sat below and to the right of the pilot and the dorsal gunner in a partially retractable turret. Up to 2,000 kg of bombs could be carried in the bomb bay and two 500 kg bombs externally. The DB-240 had been designed to use the experimental Klimov M-106 engine, but the less-powerful Klimov M-105 engine had to be used instead because the M-106 was not available.

The prototype flew for the first time on 14 May 1940 and began its state acceptance trials on 27 September that year. The weaker engines prevented the aircraft from reaching its designed performance - it could only attain 445 km/h at 4,250 metres instead of the expected 500 km/h at 6,000 meters. However, this did not offset its virtues of a heavy bomb load and long range (4,100 km carrying 1,000 kg of bombs). The type was ordered into production at Factory No. 18 at Voronezh, but on 5 December 1940 the Soviet government decided that output of the initial version with M-105 engines shall be halted due to the poor results shown during the state trials. It was planned to continue with building a modified version with Mikulin AM-37 engines, but nothing came of this. By the time of the production stop, the factory had produced assemblies for 71 aircraft (these were completed until the summer of 1941) plus some assemblies for 269 more aircraft which had to be scrapped then. The designation of the type was changed from DB-240 to Yer-2 by a decree of the NKAP issued on 9 December 1940. By 16 May 1941, only 11 of the 71 aircraft built had been test-flown, 10 more were on the airfield of the factory and 50 were still in the stage of final assembly. The last three aircraft were handed over by the factory to the Soviet Air Force as late as September 1941. Production of a version with Charomski M-40F diesel engines started at Voronezh on 5 June 1941, but was stopped after the German invasion later that month.

The Charomski M-30B (later ACh-30B) diesel engine seemed to offer more potential than the M-105, so the Yer-2 was evaluated with this engine. The cockpit was modified to accommodate two pilots side-by-side, and the wing and tailplane areas were increased. On 21 September 1943, the State Defence Committee decided to place the Yer-2 2ACh-30B into production with Factory No. 39 at Irkutsk. The first such Yer-2 was submitted to its state trials in February 1944, and the first ten aircraft were handed over to front-line units in late August. 104 of the bombers were ferried from Irkutsk to Moscow between February and April 1945, and the factory had 57 fuselages, 78 wings and 70 empennages on stock as of 10 May 1945, while some 15 assembled aircraft were stored at the factory airfield as no ACh-30B engines were available for them. Another 80 aircraft were ferried from Irkutsk to Moscow between May and September, but on 24 August 1945 the State Defence Committee decided to stop accepting Yer-2s as the aircraft performed poorly during the military trials with 18 bad (bombardment division). An improved version under the designation Yer-2MM (for 'malaya



modernizatsiya' - small modernisation) was produced in late 1945, but never entered state trials. Three aircraft were modified with a 10-seat VIP cabin and long-range fuel tanks in the bomb-bay while the military equipment was removed. These machines were designated Yer-2ON (for 'osobogo naznacheniya' - special purpose) and were used for shuttle flights between Irkutsk and Moscow. Production of the Yer-2 was finally stopped on the basis of a government decree dated 26 February 1946. At that time 94 aircraft were waiting for delivery on the airfield of Factory No. 39, and another 49 were under final assembly, while assemblies for many more aircraft had to be scrapped. Total production of the Yer-2 was 462 aircraft.

The operational history of the Yer-2 was rather limited. Not a single aircraft of the type was on charge of a front-line unit when Germany invaded the Soviet Union on 22 June 1941. For raids into the German hinterland, four 'special purpose' long-range bombardment regiments were formed during the summer of 1941, with two of them (420 dbap and 421 dbap) receiving the Yer-2. As of 4 August, 420 dbap had 32 Yer-2s on charge and 421 dbap 28 aircraft. Unfortunately, the type tended to catch fire in-flight due to leaking fuel pipes, leading to the loss of three Yer-2s of 420 dbap alone until 1 September. 420 dbap flew a bombing raid from Pushkin against Berlin during the night 10/11 August 1941, but only one of the three Yer-2s which took part in the raid managed to return. Two raids were flown against Königsberg in late August and early September, but for the rest of 1941 the long-range bombers flew mainly tactical ground-attack missions (day and night), resulting in heavy losses. 63 Yer-2s were in service on 1 October 1941, but only 34 of them were operational. As 420 dbap had lost 30 of its 40 aircraft by late October it was disbanded, and its remaining aircraft were passed on to 421 dbap in November. That unit was then redesignated 747 ap dd (long-range aviation regiment) and had some 13-15 servicable Yer-2s by the end of 1941. Twelve remained on strength by 18 March 1942, eight by the end of 1942 and six by early April 1943. The last combat mission was flown by three Yer-2s on 8 April 1943. During the same month, the surviving aircraft were transferred to the navigators' school at Chelyabinsk while 747 ap dd received Il-4s and B-25s instead. The Yer-2 was placed back into production at the end of 1943, and seven long-range aviation regiments (326, 327, 328, 329, 330, 332 and 333 ap dd) were formed in order to absorb the new aircraft. Each regiment was to operate 32 bombers, but none of them ever reached full strength. The first Yer-2s with ACh-30B engines were taken on charge in August 1944, with 34 aircraft of the type being in service on 30 December and 116 on 9 May 1945. The first combat mission undertaken by Yer-2s after they returned to production was the massive Soviet air raid on Königsberg on 7 April 1945 in which 19 aircraft of 327 and 329 bap (all long-range aviation regiments had been redesignated bombardment regiments in December 1944) took part. Apart from a second raid against Königsberg the next day, only a few missions against the Seelow Heights and Berlin were flown before the war ended. The type remained in service with long-range aviation until spring 1946 when the aircraft were withdrawn from use following a respective decree of the Council of Ministers dated 22 March 1946. At that time 233 Yer-2s were on charge (dozens of the aircraft built never entered service). Many Yer-2s were ferried from Irkutsk to Byelaya Tserkov, just to be destroyed there on arrival (they were smashed by tanks and tractors). Some of the regiments which had flown the Yer-2 were disbanded, while some others were temporarily re-equipped with the Ilyushin Il-4, an older and less capable aircraft. The real successor of the Yer-2 was the Tupolev Tu-4. All remaining Yer-2s were scrapped in the late 1940s, not a single one survived to this day, unfortunately.

## **2 DB-240 prototypes built by Factory No. 240 at Moscow-Khodynka in 1940 (evacuated to Kazan oct41 and became Factory No. 134 12jul42)**

---	no code	DB-240	OKB-240	f/f	14may40	the first prototype; with M-105 engines; in natural metal c/s without any markings whatsoever; factory trials completed 01jul40 (some 30 flights); presented to the public at Tushino 16aug40; carried a load of 1,000 kg of bombs over 4,111 km 24aug40; ferried to the NII VVS 27sep40 and underwent state trials 01/17oct40; re-engined with AM-35A engines on the basis of a decree issued 14nov40; damaged in late jan41 on take-off from Moscow-Khodynka when the left engine failed during the take-off run and the aircraft ground-looped, damaging the landing gear strut; f/f 01mar41; ferried to the LII NKAP at Ramenskoye may41; trials aborted jun41; subsequently re-engined with AM-37 engines (as the 2nd of the type with these engines); ferried to Kazan in autumn 1941; possibly it was this aircraft which was w/o on landing at Kazan when it collided with a dormitory at the perimeter of the airfield (the crew of A.N. Grinchik escaped unhurt, but some inhabitants of the dormitory suffered)
---	not known	DB-240	OKB-240			the second prototype; initially with M-105 engines; re-engined with AM-37 engines (also designated Yer-4 in the version with these engines); f/f as such 25oct40; re-flown only 14may41; returned by the LII NKAP to Factory No. 240 for modifications 15jun41; damaged during a German bombing raid on Moscow 22jul41, but repaired; underwent state trials with the NII VVS 20sep41/jan42 (initially at Chkalovskaya and later at Sverdlovsk-Koltsovo)
---	not known	Yer-2	OKB-240			'No. 3'; static test airframe
---	--	Yer-2	OKB-240			the fourth prototype; destroyed before completion during a German bombing raid on Moscow during the night 22/23jul41
---	not known	Yer-2	OKB-240	f/f	may41	with M-40F engines; started ground trials apr41; ferried to Ramenskoye 15may41 and made 15 test flights with the LII NKAP before 22jun41
---	not known	Yer-2	OKB-240	mfd	oct41	the 'dublyor' with with M-40F engines; did not undergo flight tests; re-engined with M-30 engines
---	no code	Yer-2	OKB-134	mfd	sep42	'No. 4'; with M-30B engines; in dark green c/s with light blue underside; started trials with the NII VVS feb43

## **71 Yer-2 built by Factory No. 18 at Voronezh in 1940/41**

The c/n for the Yer-2 with M-105 engines started with the factory number 18, followed by a 5 (standing for the 5th type of aircraft built by the factory), the number in the batch (two digits) and the batch number (also two digits). The c/n for the Yer-2 with M-40F engines was to be the same, with the type number changed to 7. The first two batches of the Yer-2 with M-40F engines were to contain 10 aircraft each and all following batches 20 aircraft each.

18 5 01 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-01; suffered from leaking fuel pipes
18 5 02 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-02; suffered from leaking fuel pipes
18 5 03 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-03; on charge of 3 ae 421 bap 16oct41; later opb 747 ap dd; lost 30jan43
18 5 04 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-04
18 5 05 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-05
18 5 06 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-06
18 5 07 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-07
18 5 08 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-08
18 5 09 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-09
18 5 10 01	not known	Yer-2	Soviet Air Force	mfd	1940	line # 01-10
18 5 01 02	not known	Yer-2	Soviet Air Force	mfd	1940	line # 02-01
18 5 02 02	not known	Yer-2	Soviet Air Force	mfd	1940	line # 02-02
18 5 03 02	not known	Yer-2	Soviet Air Force	mfd	1940	line # 02-03
18 5 04 02	not known	Yer-2	Soviet Air Force	mfd	dec40	line # 02-04; slightly damaged 31dec40 on a test flight flight from Voronezh when encountered poor weather and made a forced landing near Dobrinka railway station (120 km from the factory airfield), the damaged landing gear was repaired on-site
18 5 05 02	not known	Yer-2	Soviet Air Force	mfd	1941	line # 02-05; tested with the AK-1 auto-pilot
18 5 01 03	not known	Yer-2	Soviet Air Force	mfd	1941	line # 03-01
18 5 02 03	not known	Yer-2	Soviet Air Force	mfd	1941	line # 03-02
18 5 03 03	not known	Yer-2	Soviet Air Force	mfd	1941	line # 03-03; on charge of 1 ae 421 bap 16oct41
18 5 04 03	not known	Yer-2	Soviet Air Force	mfd	1941	line # 03-04
18 5 05 03	not known	Yer-2	Soviet Air Force	mfd	1941	line # 03-05
18 5 06 03	not known	Yer-2	Soviet Air Force	mfd	1941	line # 03-06; on charge of 3 ae 421 bap 16oct41
18 5 20 03	not known	Yer-2	Soviet Air Force	mfd	aug41	line # 03-20
18 5 01 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-01
18 5 02 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-02; on charge of 3 ae 421 bap 16oct41
18 5 03 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-03
18 5 04 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-04
18 5 05 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-05; on charge of 3 ae 421 bap 16oct41
18 5 06 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-06
18 5 07 04	not known	Yer-2	NKAP zavod # 45	rgd	15mar44	line # 04-07; opb 420 bap; w/o 07oct41 when was shot down
18 5 08 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-08
18 5 09 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-09; opb 421 bap; h/o 05aug41; w/o 07aug41 on a test flight from Rostov-na-Donu at night when lost height and dived into the ground, all 4 crew (pilot: 1st Lieutenant N.I. Martynov) killed, the cause of the crash could not be established (possibly the pilot had lost spatial orientation)
18 5 10 04	not known	Yer-2	Soviet Air Force	mfd	1941	line # 04-10
18 5 01 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-01; on charge of 3 ae 421 bap 16oct41
18 5 02 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-02; on charge of 421 bap 16oct41
18 5 03 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-03; on charge of 2 ae 421 bap 16oct41, under repair
18 5 04 05	not known	Yer-2	Soviet Air Force	mfd	jun41	line # 05-04; on charge of 3 ae 421 bap 16oct41
18 5 05 05	not known	Yer-2	NKAP zavod # 26	rgd	29sep43	re-engined with VK-105PF-2 engines in spring 1945; w/o 29apr45 during its 7th test flight with the new engines when the left engine caught fire at a height of some 60-80 metres shortly after take-off and the aircraft lost height, crashed and burnt out, all crew (pilot: P.K. Maslyukov) killed
18 5 05 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-05; on charge of 2 ae 421 bap 16oct41
18 5 06 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-06; on charge of 2 ae 421 bap 16oct41, being under repair
18 5 07 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-07; w/o 24jul41 on its acceptance flight from the airfield of the factory when was twice attacked by an I-16 fighter of the Soviet Air Force near Rossosh airfield and caught fire, 2 of the 4 crew (among them the pilot, Major K.K. Rykov) managed to bail out while the other 2 were killed
18 5 08 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-08; on charge of 2 ae 421 bap 16oct41
18 5 09 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-09
18 5 10 05	not known	Yer-2	Soviet Air Force	mfd	1941	line # 05-10; opb 2 ae 421 bap; damaged 05aug41 when a pipe of the hydraulics system burst and the reserve system failed as well so that landing gear could not be lowered and the aircraft made a belly-landing (pilot: 1st Lieutenant Kondratyev); on charge of 2 ae 421 bap 16oct41
18 5 01 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-01; on charge of 1 ae 421 bap 16oct41
18 5 02 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-02
18 5 03 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-03; opb 420 bap; w/o 19sep41 when was shot down
18 5 04 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-04

18 5 05 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-05
18 5 06 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-06
18 5 07 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-07
18 5 08 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-08; on charge of 3 ae 421 bap 16oct41
18 5 09 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-09
18 5 10 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-10
18 5 11 06	not known	Yer-2	Soviet Air Force	mfd	jul41	line # 06-11
	CCCP-1541	Yer-2	NKAP zavod # 16	rgd	10aug43	damaged 14aug43 on landing at Kuibyshev when landed long and the right main gear strut broke during the emergency breaking (pilot: M.K. Baikalov)
18 5 12 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-12; on charge of 1 ae 421 bap 16oct41
18 5 13 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-13
18 5 14 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-14
18 5 15 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-15
18 5 16 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-16; on charge of 2 ae 421 bap 16oct41, under repair; later opb 747 ap dd
18 5 17 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-17
18 5 18 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-18
18 5 19 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-19; declared to be the benchmark aircraft mar41
18 5 20 06	not known	Yer-2	Soviet Air Force	mfd	1941	line # 06-20
18 5 01 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-01
18 5 02 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-02
18 5 03 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-03
18 5 04 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-04
18 5 05 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-05
18 5 06 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-06
18 5 07 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-07; damaged 06may41 when suffered engine problems and made a forced landing
18 5 08 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-08
18 5 09 07	not known	Yer-2	Soviet Air Force	mfd	1941	line # 07-09
18 5 10 07	not known	Yer-2	Soviet Air Force	mfd	jun41	line # 07-10; slightly damaged 15jun41 on landing at the factory airfield when overran the runway due to pilot error and collided with a fence

### **391 Yer-2 built by Factory No. 39 at Irkutsk from 1943 to 1945 (1943: 2, 1944: 148, 1945: 241)**

The c/n system started with 7 (probably the izdeliye number), followed by the batch number (two digits), the factory number 39 and the number in the batch (two digits).

7 01 39 01	"1"	Yer-2	Soviet Air Force	mfd	dec43	line # 01-01; benchmark aircraft with M-30B engines; underwent state trials with the NII VVS feb44/oct44, which it did not pass (the trials were initially conducted at Irkutsk before the aircraft was ferried to Chkalovskaya 02/05apr44); armament modified by Factory No. 134 at Moscow-Khodynka in late 1944
7 01 39 02	not known	Yer-2	Soviet Air Force	mfd	dec43	line # 01-02; underwent trials in 1944
7 01 39 03	no code	Yer-2	Soviet Air Force	mfd	1944	line # 01-03; with ACh-30B engines; in green/brown camo c/s with light blue undersides; underwent trials with modified engines and experimental propellers developed by TsAGI
7 01 39 04	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-04
7 01 39 05	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-05
7 01 39 06	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-06
7 01 39 07	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-07; w/o 10aug45 when crashed near Poltava
7 01 39 08	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-08
7 01 39 09	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-09
7 01 39 10	not known	Yer-2	Soviet Air Force	mfd	1944	line # 01-10; damaged 02jun44
7 02 39 01	"11" white	Yer-2MM	Soviet Air Force	mfd	1944	line # 02-01; with ACh-30BF engines; nose, cockpit and fins modified by Factory No. 134 at Moscow-Khodynka in late 1944; in all-black c/s; underwent check trials with the NII VVS in summer/autumn 1945 (completed 13oct45)
7 02 39 02	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-02; underwent trials in 1945
7 02 39 03	not known	Yer-2	Soviet Air Force	mfd	mar44	line # 02-03
7 02 39 04	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-04
7 02 39 05	not known	Yer-2	Soviet Air Force	mfd	mar44	line # 02-05
7 02 39 06	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-06; opb 332 ap dd; damaged 19oct44 when one of the engines failed and the aircraft made an emergency landing on the belly (pilot: Captain V.I. Ailin)
7 02 39 07	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-07
7 02 39 08	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-08
7 02 39 09	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-09
7 02 39 10	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-10
7 02 39 16	not known	Yer-2	Soviet Air Force	mfd	mar44	line # 02-16
7 02 39 17	not known	Yer-2	Soviet Air Force	mfd	mar44	line # 02-17
7 02 39 18	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-18
7 02 39 19	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-19
7 02 39 20	not known	Yer-2	Soviet Air Force	mfd	1944	line # 02-20
7 03 39 01	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-01
7 03 39 02	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-02
7 03 39 03	not known	Yer-2	Soviet Air Force	mfd	jun44	line # 03-03; opb 104 bap; lost 26jul44
7 03 39 04	not known	Yer-2	Soviet Air Force	mfd	jun44	line # 03-04; with ACh-30B engines
7 03 39 05	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-05
7 03 39 06	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-06
7 03 39 07	not known	Yer-2	Soviet Air Force	mfd	jun44	line # 03-07; with ACh-30B engines
7 03 39 08	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-08
7 03 39 09	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-09
7 03 39 10	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-10
7 03 39 11	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-11
7 03 39 12	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-12
7 03 39 13	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-13
7 03 39 14	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-14
7 03 39 15	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-15
7 03 39 16	not known	Yer-2	Soviet Air Force	mfd	jun44	line # 03-16; with ACh-30B engines
7 03 39 17	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-17
7 03 39 18	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-18
7 03 39 19	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-19
7 03 39 20	not known	Yer-2	Soviet Air Force	mfd	1944	line # 03-20
7 04 39 01	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-01
7 04 39 02	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-02
7 04 39 03	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-03
7 04 39 04	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-04
7 04 39 05	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-05
7 04 39 06	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-06
7 04 39 07	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-07
7 04 39 08	not known	Yer-2	Soviet Air Force	mfd	1944	line # 04-08; opb 332 ap dd and later by 330 bap; dbr 03mar45 when the pilot (3rd Lieutenant Skorokhodov) levelled out too high on landing so that the aircraft came down hard and a main landing gear strut broke
7 05 39 11	not known	Yer-2	Soviet Air Force	mfd	1944	line # 05-11; benchmark aircraft for the modifications; underwent factory trials early oct44/dec44 and check trials with the NII VVS dec44
7 06 39 01	not known	Yer-2	Soviet Air Force	mfd	1944	line # 06-01; initially with ACh-30B engines; modernised in spring 1945 to become a Yer-2MM; underwent tests in the T-101 wind tunnel of TsAGI may45 and flight tests afterwards (28 flights until sep45); re-engined with ACh-30BF engines in autumn 1945 and resumed flight tests 09dec45; last flight 22apr46 when the right engine failed
7 06 39 11	not known	Yer-2	Soviet Air Force	mfd	1944	line # 06-11; opb 332 bap; in camo c/s; damaged in a forced landing apr45
7 07 39 11	"113"	Yer-2	Soviet Air Force	mfd	1944	line # 07-11; w/o in 1945 when an engine failed and the aircraft crashed, crew (pilot: G.A. Karanysh) killed
7 08 39 01	not known	Yer-2	Soviet Air Force	mfd	1944	line # 08-01; the first Yer-2 with a new canopy for the pilot
7 09 39 05	"5"	Yer-2	Soviet Air Force	mfd	1944	line # 09-05; opb 332 ap dd and later by 330 bap; in camo c/s; dbr jul45 when an engine failed and the aircraft made a forced landing
7 09 39 13	not known	Yer-2	Soviet Air Force	mfd	mar45	line # 09-13; underwent trials with the GK NII in 1945
7 09 39 18	not known	Yer-2	Soviet Air Force	mfd	1944	line # 09-18; opb 332 ap dd and later by 330 bap; dbr 23may45 when veered off the runway during the landing run, ground-looped and ended up in a ditch, the landing gear and one engine nacelle were ripped off (pilot: 3rd Lieutenant Skorokhodov)
7 10 39 01	not known	Yer-2	Soviet Air Force	mfd	mar45	line # 10-01; the first Yer-2 with a lower nose; was to undergo state trials with the NII VVS from jan45
7 10 39 02	not known	Yer-2	Soviet Air Force	mfd	mar45	line # 10-02; improved aircraft which was to undergo state trials with the NII VVS from jan45
7 11 39 16	no code	Yer-2	Soviet Air Force	mfd	1944	line # 11-16; opb 326 ap dd; the aircraft of the regiment commander, carried a star on the tail instead of a code; slightly damaged 30nov44 when a tyre burst during the landing run (pilot: Lieutenant Colonel P.P. Markov)
7 15 39 01	not known	Yer-2	Soviet Air Force	mfd	1945	line # 15-01
7 16 39 15	not known	Yer-2	Soviet Air Force	mfd	1945	line # 16-15; the last Yer-2 sans suffixe built
7 16 39 16	not known	Yer-2	Soviet Air Force	mfd	1945	line # 16-16; assemblies sent to Factory No. 86 at Taganrog for final assembly
7 16 39 17	not known	Yer-2	Soviet Air Force	mfd	1945	line # 16-17; assemblies sent to Factory No. 86 at Taganrog for final assembly
7 16 39 18	not known	Yer-2	Soviet Air Force	mfd	1945	line # 16-18; assemblies sent to Factory No. 86 at Taganrog for final assembly
7 16 39 19	not known	Yer-2	Soviet Air Force	mfd	1945	line # 16-19; assemblies sent to Factory No. 86 at Taganrog for final assembly
7 16 39 20	not known	Yer-2	Soviet Air Force	mfd	1945	line # 16-20; assemblies sent to Factory No. 86 at Taganrog for final assembly

7 22 39 01	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-01
7 22 39 02	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-02
7 22 39 03	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-03
7 22 39 04	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-04
7 22 39 05	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-05
7 22 39 06	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-06
7 22 39 07	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-07
7 22 39 08	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-08
7 22 39 09	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-09
7 22 39 10	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-10
7 22 39 11	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-11
7 22 39 12	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-12
7 22 39 13	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-13
7 22 39 14	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-14
7 22 39 15	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-15
7 22 39 16	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-16
7 22 39 17	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-17
7 22 39 18	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-18
7 22 39 19	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-19
7 22 39 20	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 22-20
7 23 39 01	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-01
7 23 39 02	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-02
7 23 39 03	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-03
7 23 39 04	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-04
7 23 39 05	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-05
7 23 39 06	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-06
7 23 39 07	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-07
7 23 39 08	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-08
7 23 39 09	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-09
7 23 39 10	not known	Yer-2MM	Soviet Air Force	mfd	1945	line # 23-10

### **3 Yer-2ON built by Factory No. 39 at Irkutsk in 1945**

The c/n system started with 8 (probably the izdeliye number), followed by the batch number (two digits), the factory number 39 and the number in the batch (two digits).

8 01 39 01	no code	Yer-2ON	Soviet Air Force	mfd	1945	line # 01-01; in olive drab c/s with light blue underside; ferried non-stop from Irkutsk to Moscow 16apr45
8 01 39 02	not known	Yer-2ON	Soviet Air Force	mfd	1945	line # 01-02
8 01 39 03	not known	Yer-2ON	Soviet Air Force	mfd	1945	line # 01-03

### **Yer-2 with unknown construction numbers**

---	"1" blue	Yer-2	Soviet Air Force			opb 421 dbap; w/o 06oct41 on a bombing raid against a German column on the road Chiplevo-Yukhnov when was shot down by fighters of the German Air Force, the navigator and the gunner survived (pilot: 2nd Lieutenant G.M. Zhiltsov)
---	"1" blue	Yer-2	Soviet Air Force			opb 747 ap dd; w/o 31may42 on landing at its home base Kratovo when was shot down by Soviet anti-aircraft artillery by mistake, all crew (pilot: Kalinin) killed
---	"1" blue	Yer-2	Soviet Air Force			opb 421 dbap; w/o during the night 21/22feb43 when did not return from a bombing mission against Bryansk (pilot: 1st Lieutenant N.A. Miroshnikov)
---	"1" white	Yer-2	Soviet Air Force			opb 421 dbap; w/o 06oct41 on a bombing raid against a German column on the road Chiplevo-Yukhnov when was shot down by fighters of the German Air Force (pilot: Captain Andreyev)
---	"1" white	Yer-2	Soviet Air Force			with ACh-30B engines; opb uchebny tsentr ADD at Byalaya Tserkov in 1944; in green/brown camo c/s with light blue underside
---	"1" yellow	Yer-2	Soviet Air Force			opb 421 dbap; flown by Captain I.T. Shcherbatenko oct41
---	"1" yellow	Yer-2	Soviet Air Force			opb uchebny tsentr ADD at Byelaya Tserkov in 1944; in dark green/dark brown camo c/s with light grey undersides
---	"2" blue	Yer-2	Soviet Air Force			opb 421 dbap; w/o 18oct41 on a bombing mission against a bridge over the river Volga near Kalinin when was hit first by German anti-aircraft artillery and later by fighters of the German Air Force, caught fire and crashed in a forest (pilot: Morozov)
---	"2" blue	Yer-2	Soviet Air Force			with M-105R engines; opb 747 ap dd; in olive drab c/s with black undersides; w/o 04mar42 when was shot down by a fighter of the German Air Force (pilot: Captain I.F. Galinski)
---	"2" blue	Yer-2	Soviet Air Force			opb 747 ap dd; still on charge apr43
---	"2" yellow	Yer-2	Soviet Air Force			opb 1 ae 420 dbap; in olive drab c/s with light blue undersides; w/o during the night 10/11aug41 on a bombing raid from Pushkin on Berlin when probably exploded over the target (pilot: Captain A.G. Stepanov)
---	"3" blue	Yer-2	Soviet Air Force			opb 421 dbap; flown by Captain I.F. Galinski oct41
---	"3" blue	Yer-2	Soviet Air Force			opb 747 ap dd; still on charge apr43
---	"3" yellow	Yer-2	Soviet Air Force			opb 421 dbap; took part in the bombing mission against a bridge over the river Volga near Kalinin 18oct41 (pilot: Tikhonov)
---	"4" blue	Yer-2	Soviet Air Force			opb 421 dbap; reportedly shot down a fighter of the German Air Force during a bombing raid against a German column on the road Chiplevo-Yukhnov 06oct41
---	"4" blue	Yer-2	Soviet Air Force			opb 747 ap dd; still on charge apr43
---	"4" white	Yer-2	Soviet Air Force			with M-105R engines; opb 421 dbap; in brown c/s with light blue undersides; w/o 18oct41 on a bombing mission against a bridge over the river Volga near Kalinin when was hit first by German anti-aircraft artillery and later by fighters of the German Air Force, caught fire and made a forced landing on the Moskovskoye morye reservoir (pilot: 2nd Lieutenant A.A. Balenko)
---	"5" blue	Yer-2	Soviet Air Force			opb 747 ap dd; still on charge apr43
---	"5" red	Yer-2	Soviet Air Force			opb 421 dbap; in green/brown camo c/s with black undersides
---	"5" white	Yer-2	Soviet Air Force			opb 4 ae 328 dbap in spring 1945 (pilot: Major Didenko); in green/brown camo c/s with black undersides
---	"6" blue	Yer-2	Soviet Air Force			opb 421 dbap; last mission flown 25jan43, probably damaged and not repaired (pilot: Ivanov)
---	"6" yellow	Yer-2	Soviet Air Force			opb 421 dbap; w/o 18oct41 on a bombing mission against a bridge over the river Volga near Kalinin when was hit first by German anti-aircraft artillery and later by fighters of the German Air Force, caught fire and crashed (pilot: Buzovir)
---	"7" red	Yer-2	Soviet Air Force			opb 747 ap dd; dbr aug42 during the Battle of Stalingrad when was attacked by Bf 109s of the German Air Force, managed to damage 2 fighters, but suffered heavy damage itself and made a forced landing (pilot: Viskovskii)
---	"8" blue	Yer-2	Soviet Air Force			opb 747 ap dd; w/o 17feb42 when did not return from a bombing mission against Smolensk (pilot: Gorokhov)
---	"8" blue	Yer-2	Soviet Air Force			opb 747 ap dd; still on charge apr43
---	"8" white	Yer-2	Soviet Air Force			opb 421 dbap; reportedly shot down 2 fighters of the German Air Force during a bombing raid against a German column on the road Yukhnov-Spas-Demensk 07oct41; w/o 18oct41 on a bombing mission against a bridge over the river Volga near Kalinin when was hit first by German anti-aircraft artillery and later by fighters of the German Air Force, caught fire and crashed (pilot: 2nd Lieutenant N.P. Tyklin)
---	"8" yellow	Yer-2	Soviet Air Force			opb 421 dbap; took part in the bombing mission against a bridge over the river Volga near Kalinin 18oct41 (pilot: Tryapitsyn)
---	"9" blue	Yer-2	Soviet Air Force			opb 421 dbap; took part in a bombing mission against a target near Kaluga 28oct41, was attacked by 1 Bf 109 and 2 Bf 110s of the German Air Force (reportedly shot down a Bf 110) and returned with 58 bullet holes, 2 crew members injured (pilot: 1st Lieutenant Kondratyev)
---	"9" blue	Yer-2	Soviet Air Force			opb 747 ap dd; still on charge apr43
---	"14" white	Yer-2	Soviet Air Force			opb uchebny tsentr ADD at Byelaya Tserkov in 1944; in green/brown camo c/s with light grey undersides, code outlined in red
---	"130" white	Yer-2	Soviet Air Force			opb 329 dbap in summer 1945; in light grey/dark grey camo c/s with black undersides, code outlined in red
---	no code	Yer-2	Soviet Air Force			carried a star on the tail instead of a code; opb 421 dbap; w/o 18oct41 on a bombing mission against a bridge over the river Volga near Kalinin when was hit first by German anti-aircraft artillery and later by fighters of the German Air Force, caught fire and crashed in a forest (pilot: 2nd Lieutenant A.S. Gaivoronski)
---	no code	Yer-2	OKB-134			built by Factory No. 18; re-engined with Dobrotvorski MB-100 engines by OKB-134 on the basis of a decree issued jun42; in dark green c/s with light blue underside; f/f 28aug43; trials completed jul44; re-engined with MB-100F engines in 1945
---	not known	Yer-2	OKB-134	mfd	1944	built by Factory No. 39; prototype of a torpedo-bomber version; with ACh-30B engines
---	not known	Yer-2	OKB-134	mfd	1945	also designated Yer-4; built by Factory No. 39; with ACh-30BF engines
---	not known	Yer-2N	Soviet Air Force			converted to a carrier aircraft for the Chelomei 10Kh air-to-ground missile (based on the German Fi 103) and its pulso engine
---	not known	Yer-2LL	Soviet Air Force			flying test-bed for engines and propellers
---	not known	Yer-2BM	OKB-134			planned version with ACh-31 engines; 65 % complete by jan46, but construction stopped (only a full-scale mock-up was completed which was presented to the mock-up commission 31aug45)
---	not known	Yer-2	Soviet Air Force			opb 420 ap dd; w/o 25jul41 when caught fire and crashed, the gunner was killed while the other crew members (pilot: Sived) managed to bail out
---	not known	Yer-2	Soviet Air Force			opb 420 ap dd; w/o 29jul41 when caught fire, made a forced landing wheels-up and burnt out (pilot: Sadovskii)
---	not known	Yer-2	Soviet Air Force			opb 432 bap; was to take part in a bombing raid from Pushkin on Berlin during the night 10/11aug41, but was hit by Soviet anti-aircraft artillery over the mouth of the river Luga near Vysu, caught fire and crashed, only part of the crew managed to bail out (pilot: Major Tyaginun)

---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o during the night 10/11aug41 on a bombing raid from Pushkin on Berlin when was attacked and shot down by I-16 fighters of the Soviet Air Force on the return leg (some 30 km from Pushkin), the crew (pilot: 2nd Lieutenant B.A. Kubyshko) managed to bail out and returned to their unit
---	not known	Yer-2	Soviet Air Force	w/o on a bombing raid during the night 14/15aug41 when not all bombs could be released due to a technical problem and one of the FAB-100 bombs exploded when the crew tried to jettison them, the pilot (Captain F.F. Soroka) was thrown out of the aircraft while all other crew members were killed
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o 19sep41 on a bombing raid when was shot down by Bf 109s of the German Air Force (pilot: Kalinin)
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o 19sep41 on a bombing raid when was shot down by Bf 109s of the German Air Force (pilot: Kondranin)
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; dbr 19sep41 on a bombing raid when was damaged by Bf 109s of the German Air Force and made a forced landing (pilot: Captain M. Brusnitsyn)
---	not known	Yer-2	Soviet Air Force	opb 421 dbap; w/o 30sep41 on a bombing raid when was shot down by fighters of the Soviet Air Force by mistake, navigator killed (pilot: 2nd Lieutenant Yeremenko)
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o 03oct41 on a bombing raid against railway stations when was shot down by fighters of the German Air Force (pilot: 2nd Lieutenant P.N. Volodin)
---	not known	Yer-2	Soviet Air Force	opb 421 dbap; w/o 03oct41 when did not return from a bombing raid against railway stations (pilot: 2nd Lieutenant K.A. Maksimenko)
---	not known	Yer-2	Soviet Air Force	opb 421 dbap; w/o 06oct41 on a bombing raid against a German column on the road Chiplevo-Yukhnov when was shot down by Bf 109s of the German Air Force, the navigator and the gunner survived (pilot: P.A. Klimenko)
---	not known	Yer-2	Soviet Air Force	w/o 06oct41 on a bombing raid against a German column on the road Chiplevo-Yukhnov when was shot down by fighters of the German Air Force, both gunners killed while the pilot (Captain Brusnitsyn) and the navigator managed to bail out
---	not known	Yer-2	Soviet Air Force	w/o 06oct41 on a bombing raid against a German column on the road Chiplevo-Yukhnov when was shot down, the pilot (Nechayev) and a gunner survived
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o 07oct41 on a bombing raid against a German column on the road Yukhnov-Spas-Demensk when was shot down by Bf 109s of the German Air Force, crew (pilot: 2nd Lieutenant N.A. Khopryakov) killed
---	not known	Yer-2	Soviet Air Force	opb 421 dbap; w/o 07oct41 on a bombing raid against a German column on the road Yukhnov-Spas-Demensk when was shot down by Bf 109s of the German Air Force, crew (pilot: Captain Alekseyev) killed
---	not known	Yer-2	Soviet Air Force	opb 421 dbap; w/o 07oct41 on a bombing raid against a German column on the road Yukhnov-Spas-Demensk when was shot down by Bf 109s of the German Air Force, the crew (pilot: 2nd Lieutenant Boiko) survived
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o 08oct41 on a bombing raid against a German column when was shot down by fighters of the German Air Force (pilot: 2nd Lieutenant M.M. Khokhlov)
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o 08oct41 on a bombing raid against a German column when was shot down by fighters of the German Air Force (pilot: 2nd Lieutenant Minakov)
---	not known	Yer-2	Soviet Air Force	w/o during the night 10/11oct41 on a bombing raid against the railway yards at Roslavl and Smolensk when was shot down by German anti-aircraft artillery, the crew (pilot: 2nd Lieutenant Kanarski) survived and returned to its unit
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; dbr during the night 14/15oct41 on take-off for a bombing mission when the pilot (Tkachenko) did not cope with the situation so that the aircraft stalled and crashed, the crew escaped
---	not known	Yer-2	Soviet Air Force	opb 420 dbap; w/o in the late hours of 22oct41 when the crew lost orientation on return from a bombing raid, the aircraft ran out of fuel and the crew (pilot: 2nd Lieutenant B.A. Kubyshko) bailed out
---	not known	Yer-2	Soviet Air Force	w/o 25oct41 when did not return from a bombing mission (pilot: 2nd Lieutenant V.M. Malinin)
---	not known	Yer-2	Soviet Air Force	opb 747 dbap; w/o 31jan42 when did not return from a bombing mission (pilot: Yeremenko)
---	not known	Yer-2	Soviet Air Force	opb 330 bap; dbr 27mar45 when both engines failed shortly after take-off and the aircraft came down in a forest (pilot: 3rd Lieutenant Shayyrin)