

German F-4F Phantoms

A 40 year stop-gap solution *By Marco Dijkshoorn*



Small dots, lots of smoke. Thick trails with small black dots like arrows in the skies, a scene that is familiar to people that have seen the McDonnell Douglas F-4 Phantom II fly. A scene that is getting harder and harder to witness now that another European user of the Phantom has said goodbye to its 'Spooks'.

On 24 July 2013, the F-4F Phantom of the Luftwaffe / German Air Force (GAF) made its last flight thus bringing an end to 40 years of service for this remarkable fighter. For many, including the pilots, weapon system officers and ground personnel, this farewell was a hard one because the F-4F is loved by many, including many aviation enthusiasts.

(Wittmund, 4 March 2009, Thijs van der Laaken)

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The early years

Still operating the ageing F-104G Starfighter and the Fiat G91 in the fighter-bomber role in the late sixties, the Luftwaffe was desperately seeking replacement aircraft for this dual-role. A replacement aircraft was already under consideration. In March 1969 the United Kingdom, Germany, Italy and the Netherlands (which pulled out of the program in 1970) signed a memorandum of understanding to form a multinational company, Panavia Aircraft GmbH, to develop and manufacture the MRCA which would later become the PA200 Tornado. The forecasted development time of the Tornado was too long to keep the Starfighters and G91 serviceable and in 1971 the German government ordered 175 F-4F Phantoms as a stop-gap solution.

The first official delivery of an F-4F to the German Air Force took place on 19 August 1973. A short time later, on 31 August 1973, the first two German F-4Fs touched down on Wittmund, an event that would start the 40-year circle of operational life of the F-4F with JG71. Within three years after the first delivery, the final F-4F was delivered in April 1976.

Initially the Phantoms were thought to remain in service for a maximum of 15 years but because the Luftwaffe decided not to buy the ADV (Air Defence Variant) of the Tornado, approximately half of the Phantom fleet was initially used as an air defence fighter while the other half was used in the air-to-ground role. Therefore the Phantoms were not replaced within the forecasted time frame.

Training

In 1974 the new crews were trained by the 35th Tactical Fighter Wing at George AFB in California. Initially they used eight F-4Fs that came directly from the production line. In

1976, these trainers were replaced by ten F-4Es that the GAF bought solely for training purposes in the United States. These aircraft later moved to the USAF's 20th Fighter Squadron at Holloman AFB (NM) in 1992. In 1997 these F-4Es were replaced by around twenty F-4Fs that were ferried from Germany. They served with the German Air Force Tactical Training Center (GAFTTC) at Holloman, which was established on 1 May 1996 and incorporated the 20th Fighter Squadron. They lost their Luftwaffe serial and started carrying their FMS serial and 'HO' code. The GAFTTC was re-designated German Air Force Flying Training Center (GAFFTC) on 1 July 1999. The F-4F continued to operate from Holloman until the end of 2002, when the final aircraft was relieved of its training duties. The German F-4Fs at Holloman remained in the United States, with the majority ending up at the White Sands Missile Range (NM) and 309th AMARG.

Since the end of 2002, JG71 has been primarily responsible for the pilot training at Wittmund and until 2011 it trained four pilots a year on-average. No new crews were yielded since then and the number of active Phantom crews has ever declined since.

Operational units

The F-4F would be responsible for a partial replacement of two types in the Luftwaffe inventory, namely the Fiat G91 and the F-104G. These two types were the main fighters operated by the Jagdgeschwader (Fighter Wings) and fighter-bombers operated by the Jagdbombergeschwader (Fighter-Bomber Wings).

JG71 was operating the F-104G and was the first unit to receive the F-4F in 1973. The unit was fully transitioned to the F-4F by 1974. Other units operating the F-4F were:



The first F4F aircraft that rolled off the production line of McDonnell Douglas in St. Louis, Missouri was 37+01. It made its first flight on 18 May 1973 and a remarkable detail is that this was one of the surviving aircraft of JG71 until the end! It was painted in a special "Phantom Pharewell" paint scheme to commemorate the final goodbye. This aircraft will be placed on display at the gate of Wittmund Air Base. (Wittmund, 7 March 2013, Lieuwe Hofstra)



When the German Air Force sent twenty F-4Fs to Holloman AFB (NM) for training duties, the aircraft lost their Luftwaffe serial and started showing the FMS serial and 'HO' code. This aircraft, 37+53, clearly shows this as 72-1163/HO "20th FS". (Holloman AFB, 8 October 2004, Marcel J. van Bielder)

JBG35 operating from Pferdsfeld, it operated the Fiat G91 until 1976 and subsequently the Phantom until 2002. After the collapse of the Berlin Wall in 1989, and the restructuring of the Bundeswehr, the Phantom units eventually lost their ground-attack role. Therefore, JBG35 was re-designated JG73 'Steinhoff' and moved to Laage to join the MiG-29 fleet in July 1997. **JBG36** operated the F-104 from Hopsten until 1975 before converting to the F-4F and was re-designated JG72 'Westfalen' in January 1991. JG72 was disbanded in 2002 but the Phantoms remained at Hopsten to be operated until the end of 2005 by the "FLZ (Fluglehrzentrum) F-4F" (F-4F Flight Training Centre).

JG74 'Mölders' (a name that was dropped in 2005) operated the F-104G from Neuburg and converted to the Phantom by 1975. The unit operated the F-4F until 12 June 2008.

Besides JG71, **Wehrtechnische Dienststelle 61 (WTD61)** at Manching was the second unit still operating the F-4Fs until 29 June 2013.

German Phantom Versions

Three years before the introduction of the F-4F, the Luftwaffe already received its first Phantoms in the form of the RF-4E reconnaissance variant that was delivered from December 1970 onwards. By June 1971, the German Recce units AKG51 (Reconnaissance Wing 51) at Bremgarten and AGK52 at Leck had received a total of 88 Recce Phantoms. This made the choice for the F-4F no surprise. The Germans, however, sought a specially adapted version to suit their needs.

The F-4F was a specially modified version of the F-4E. It had one of the seven fuselage fuel tanks removed along with the capability to carry AIM-7 Sparrow missiles because the installed AN/APQ-120 radar system did not support that. The initial F-4F versions were therefore limited and could

only fire the legacy AIM-9B Sidewinder missiles and fire its 20mm board-cannon. The F-4F was equipped with air combat maneuvering leading edge slats and had a higher thrust to weight ratio, making the German Phantoms very agile but not very combat capable.

Upgrades

Right after the delivery of the first Phantoms, the 'Peace Rhine' program was initiated in 1980 and ended in 1984. After this program, the F-4F was well equipped for the air-to-ground role, but still lacked improved air-to-air capabilities. The "Peace Rhine" program did not include provisions for the AIM-7 Sparrow yet, so the F-4F was still limited to visual air combat. Major benefits of the program were the capabilities to fire the AIM-9L sidewinder and the AGM-65 Maverick. In 1983 the second major upgrade program was defined and under this Service Life Extension Program (SLEP) an all-weather capability and long-range capability among others needed to be introduced. All remaining 156 aircraft underwent this program which increased the structural life-span of the airframes with 10,000 flight hours.

A second stage of the SLEP was the *Kampfwertsteigerung* ('KWS' or Improved Combat Efficiency, ICE) upgrade program. The goal of this program was to ensure a life extension until after 2000. Following the SLEP, 43 aircraft were designated as ground attack aircraft which went to a limited ICE (Improved Combat Efficiency) program and could be easily distinguished by the black noses (radomes), under which the old Westinghouse APQ-120 radar was retained. The remaining 113 F-4Fs underwent the full-scale ICE program between 1991 and 1996 under which they received, among other updates, the Raytheon AN/APG-65 radar system which made the aircraft capable of firing autonomous AIM-120 Beyond Visual Range Air-to-Air Missile (BVRAAM). Besides the Beyond Visual

Range advantages, the look-down-shoot-down capabilities were also dramatically improved. The “full ICE” aircraft’s radomes were painted in the same grey/blue colour scheme as the fuselage because the black paint interfered with the APG-65 radar system. The first fully modified F-4F ‘ICE’ made its maiden flight on 2 May 1990.

The German upgrade was such a success that DASA (Daimler-Benz Aerospace AG) was involved in the development of the “Peace Icarus 2000” upgrade program of the Hellenic Air Force F-4E. The first HAF F-4E with this German update (01523 of 339 MPK) made its first test flight on 28 April 1999 with DASA Pilots Robert Hierl and WSO (Weapon Systems Officer) Richard Gütter. In total 38 HAF Phantoms would be upgraded to the F-4E ‘ICE’ standard (locally designated F-4E (AUP), Avionics Upgrade Program) of which Hellenic Aerospace Industries at Tanagra Air Base would modify 37, with the help of German technicians supplied by DASA.

Colour schemes

During the life-span of the Phantom in Luftwaffe service, three major colour scheme standards were used. At the introduction, the aircraft were painted in the two-tone grey-green Luftwaffe Norm 72 colour scheme. This camouflage was very suitable for air-to-ground and low-level operations, but it was considered too dark for its dual role fighter/bomber role. The Luftwaffe Norm 81 colour scheme, that was developed in the 80s had a better camouflage in the weather conditions over northern Europe and was more suitable for dual-role operations. It consisted of several types of grey and green colours with subtle changes from one to the other colour. After the ICE-program and with the change of the role of the Phantom to all-weather air defence fighter in the 90s, the colour scheme changed again. The introduction of the AIM-120 enabled most missions to be flown from higher altitudes due to the beyond visual range capabilities. Because of the changed mission envelope, the last and current colour scheme was introduced: Luftwaffe Norm 90J: a one-tone air-defence blue. This scheme is designed to be less visible from below against high clouds as well as from above over low clouds and/or water. This is the colour scheme that was the standard until the end.

Conclusion

After just almost forty years of service, the German Air Force withdrew the F-4F at the end of June this year. Following the initial first flight of an F-4F on 18 May 1973, a total of 175 F-4Fs would be delivered to the Luftwaffe. Besides the critical Quick Reaction Alert (QRA) role, the JG71 Phantoms were until recently asked regularly to execute the NATO Air Policing missions over the Baltics. The last time they did this was from January to April 2012, when the Phantoms flew their missions from Zokniai Air Base in Šiauliai, Lithuania. The last off-site QRA mission that the Phantoms performed was in March 2012 when four Phantoms left Wittmund for Keflavik, Iceland where they would operate until the end of March.

JG71 kept eight fully qualified and ready aircrews available until the end. These QRA crews flew one or two missions daily most of which were practice scrambles. Sometimes it involved real scrambles (called ‘Alpha scrambles’). In that case, the Phantoms needed to be airborne in less than fifteen minutes to intercept the target.

Future of Wittmund

Its strategic location ensures that Wittmund will remain at the frontlines of the Luftwaffe after the departure of the last flyable Phantom. Despite the heavy budget cuts that the Bundeswehr (German Defenses) are suffering, Wittmund will become the fourth and last air base to be operating the multi-role Eurofighter after Jagdbombergeschwader 31 ‘Boelcke’ at Nörvenich, Jagdgeschwader 73 ‘Steinhoff’ at Laage and Jagdgeschwader 74 at Neuburg. Due to the current restructuring of the Luftwaffe, JG71 will be re-designated Taktische Luftwaffengruppe ‘Richthofen’ starting in October this year. ‘Richthofen’ will then become subordinate to Taktisches Luftwaffengeschwader 31, the current JBG31 ‘Boelcke’. The first Typhoons have arrived in April 2013, well before the disbandment of the Phantom. Since the Typhoon will take over the QRA role, this gave the Typhoon crews time to prepare for this role. By 2018 the number of Typhoons needs to be around 20. When the Tornado will be withdrawn from use around 2025, it is very possible that ‘Richthofen’ becomes a true Geschwader (Wing) again with two Staffels and in total thirty aircraft.



A formation of four German Phantoms joins up with Quid65, KC-135R 58-0001 from the 100th ARW. The formation consists of the two Retro coloured Phantoms 38+10 (green/grey/black), 38+33 (dark grey/light grey) flying under callsign “Tiger1/2” and 38+64 and 37+92 that sport the Luftwaffe Norm 90J colour scheme that is the last colour scheme used on German Phantoms and are flying with call sign “Reaper1/2”. (Marco Dijkshoorn)



The Wehrtechnische Dienststelle 61 (at Ingolstadt/Manching) flew the very last F-4F sortie of the Luftwaffe on 24 July 2013. The test-unit, formerly known at Erprobungsstelle 61, has been using the type since the very beginning. To commemorate their 50 years of existence they painted 37+16 in a special colour scheme. (Manching, 16 May 2008, Hans Heemskerck)

Individual Aircraft History

The following rundown shows the current aircraft status of all 175 F-4Fs that served with the German Air Force:

37+01	F-4F-52-MC	4330	Wittmund	wfu	37+45	F-4F-54-MC	4459		scr
37+02	F-4F-52-MC	4335	JG71	w/o	37+46	F-4F-54-MC	4461		scr
37+03	F-4F-52-MC	4342	Wittmund	pres	37+47	F-4F-54-MC	4464		scr
37+04	F-4F-52-MC	4346	TSLw1	i/a	37+48	F-4F-54-MC	4466	Jever	wfu
37+05	F-4F-52-MC	4352	White Sands MR (NM)	wfu	37+49	F-4F-55-MC	4468	309th AMARG	std
37+06	F-4F-52-MC	4356		scr	37+50	F-4F-55-MC	4471		scr
37+07	F-4F-52-MC	4359		scr	37+51	F-4F-55-MC	4474	JBG35	w/o
37+08	F-4F-52-MC	4363	309th AMARG	std	37+52	F-4F-55-MC	4475		scr
37+09	F-4F-52-MC	4367	Cuxhaven	i/a	37+53	F-4F-55-MC	4479	309th AMARG	std
37+10	F-4F-53-MC	4369	TSLw3	i/a	37+54	F-4F-55-MC	4481	309th AMARG	std
37+11	F-4F-53-MC	4373		scr	37+55	F-4F-55-MC	4483		scr
37+12	F-4F-53-MC	4376		scr	37+56	F-4F-55-MC	4486	JG74	w/o
37+13	F-4F-53-MC	4379		scr	37+57	F-4F-55-MC	4488	White Sands MR (NM)	wfu
37+14	F-4F-53-MC	4381	Kaufbeuren	pres	37+58	F-4F-55-MC	4490	Neubrandenburg	pres
37+15	F-4F-53-MC	4385	Manching	wfu	37+59	F-4F-55-MC	4493	JG71	w/o
37+16	F-4F-53-MC	4388	Manching	i/a	37+60	F-4F-55-MC	4496	309th AMARG	std
37+17	F-4F-53-MC	4390		scr	37+61	F-4F-55-MC	4497	Neuburg	wfu
37+18	F-4F-53-MC	4392	White Sands MR (NM)	wfu	37+62	F-4F-55-MC	4500	JBG36	w/o
37+19	F-4F-53-MC	4394	White Sands MR (NM)	wfu	37+63	F-4F-55-MC	4502	Jever	wfu
37+20	F-4F-53-MC	4397	White Sands MR (NM)	wfu	37+64	F-4F-55-MC	4504	309th AMARG	std
37+21	F-4F-53-MC	4400	White Sands MR (NM)	wfu	37+65	F-4F-55-MC	4507		scr
37+22	F-4F-53-MC	4401	Jever	wfu	37+66	F-4F-55-MC	4509	309th AMARG	std
37+23	F-4F-53-MC	4403	White Sands MR (NM)	wfu	37+67	F-4F-55-MC	4512	309th AMARG	std
37+24	F-4F-53-MC	4405	White Sands MR (NM)	wfu	37+68	F-4F-55-MC	4515	JG74	w/o
37+25	F-4F-54-MC	4410	Holloman AFB (NM)	pres	37+69	F-4F-55-MC	4516	White Sands MR (NM)	wfu
37+26	F-4F-54-MC	4413	Jever	wfu	37+70	F-4F-55-MC	4518	309th AMARG	std
37+27	F-4F-54-MC	4415	JG71	w/o	37+71	F-4F-55-MC	4520	Furstenfeldbruck	pres
37+28	F-4F-54-MC	4417		scr	37+72	F-4F-55-MC	4522	JG74	w/o
37+29	F-4F-54-MC	4420		scr	37+73	F-4F-56-MC	4529	JG71	w/o
37+30	F-4F-54-MC	4422	White Sands MR (NM)	wfu	37+74	F-4F-56-MC	4530	JBG35	w/o
37+31	F-4F-54-MC	4425	309th AMARG	std	37+75	F-4F-56-MC	4533		scr
37+32	F-4F-54-MC	4427		scr	37+76	F-4F-56-MC	4536		scr
37+33	F-4F-54-MC	4429		scr	37+77	F-4F-56-MC	4537	???	wfu
37+34	F-4F-54-MC	4431		scr	37+78	F-4F-56-MC	4542		scr
37+35	F-4F-54-MC	4434	Cuxhaven	i/a	37+79	F-4F-56-MC	4544	Decimomannu	pres
37+36	F-4F-54-MC	4436	Kosice	pres	37+80	F-4F-56-MC	4546	JG74	w/o
37+37	F-4F-54-MC	4438		scr	37+81	F-4F-56-MC	4549	Jever	wfu
37+38	F-4F-54-MC	4441		scr	37+82	F-4F-56-MC	4553		scr
37+39	F-4F-54-MC	4444		scr	37+83	F-4F-56-MC	4556		scr
37+40	F-4F-54-MC	4446	White Sands MR (NM)	wfu	37+84	F-4F-56-MC	4559		scr
37+41	F-4F-54-MC	4449	White Sands MR (NM)	wfu	37+85	F-4F-56-MC	4561	Jever	wfu
37+42	F-4F-54-MC	4452		scr	37+86	F-4F-56-MC	4563		scr
37+43	F-4F-54-MC	4454		scr	37+87	F-4F-56-MC	4568	JG71	w/o
37+44	F-4F-54-MC	4456		scr	37+88	F-4F-56-MC	4570	Wittmund	dump



This F-4F, 38+10, must be one of the most photographed Phantoms of 2013. It was one of the aircraft that was given a special colour scheme for the withdrawal ceremonies. Here it is seen in its, then, normal colour scheme. (Wittmund, 23 September 2009, Hans Heemskerck)

37+89	F-4F-56-MC	4572	Jever	std	38+34	F-4F-58-MC	4705	Berlin-Gatow	pres
37+90	F-4F-56-MC	4577	309th AMARG	std	38+35	F-4F-58-MC	4710	JG71	w/o
37+91	F-4F-56-MC	4578	reregistered 99+91	mil	38+36	F-4F-58-MC	4712		scr
37+92	F-4F-56-MC	4581	Jever	wfu	38+37	F-4F-58-MC	4716	Jever	wfu
37+93	F-4F-56-MC	4583		scr	38+38	F-4F-58-MC	4719	White Sands MR (NM)	wfu
37+94	F-4F-56-MC	4586		scr	38+39	F-4F-58-MC	4723		scr
37+95	F-4F-56-MC	4589	JG71	w/o	38+40	F-4F-58-MC	4725		scr
37+96	F-4F-56-MC	4593	Jever	wfu	38+41	F-4F-58-MC	4728	JBG36	w/o
37+97	F-4F-57-MC	4595		scr	38+42	F-4F-58-MC	4731	Jever	wfu
37+98	F-4F-57-MC	4599		scr	38+43	F-4F-58-MC	4733		scr
37+99	F-4F-57-MC	4601	JG71	w/o	38+44	F-4F-58-MC	4736		scr
38+00	F-4F-57-MC	4604	Jever	wfu	38+45	F-4F-59-MC	4740		scr
38+01	F-4F-57-MC	4607	Jever	wfu	38+46	F-4F-59-MC	4741	Jever	wfu
38+02	F-4F-57-MC	4611	Jever	wfu	38+47	F-4F-59-MC	4744	309th AMARG	std
38+03	F-4F-57-MC	4613		scr	38+48	F-4F-59-MC	4747	Jever	wfu
38+04	F-4F-57-MC	4617	Berlin-Gatow	pres	38+49	F-4F-59-MC	4749	Aurich	pres
38+05	F-4F-57-MC	4619		scr	38+50	F-4F-59-MC	4752	Jever	wfu
38+06	F-4F-57-MC	4622		scr	38+51	F-4F-59-MC	4756	White Sands MR (NM)	wfu
38+07	F-4F-57-MC	4625		scr	38+52	F-4F-59-MC	4758	JG74	w/o
38+08	F-4F-57-MC	4627	309th AMARG	std	38+53	F-4F-59-MC	4759	???	wfu
38+09	F-4F-57-MC	4631		scr	38+54	F-4F-59-MC	4761		scr
38+10	F-4F-57-MC	4635	Neuburg	wfu	38+55	F-4F-59-MC	4763		scr
38+11	F-4F-57-MC	4636	309th AMARG	std	38+56	F-4F-59-MC	4765		scr
38+12	F-4F-57-MC	4640		scr	38+57	F-4F-59-MC	4767	Jever	wfu
38+13	F-4F-57-MC	4644	Manching	wfu	38+58	F-4F-59-MC	4769	Jever	wfu
38+14	F-4F-57-MC	4646	Wittmund	pres	38+59	F-4F-59-MC	4772	JG72	w/o
38+15	F-4F-57-MC	4649	JG71	w/o	38+60	F-4F-59-MC	4774	Jever	wfu
38+16	F-4F-57-MC	4653	Jever	wfu	38+61	F-4F-59-MC	4776	TSLw1	i/a
38+17	F-4F-57-MC	4654		scr	38+62	F-4F-59-MC	4779	Jever	wfu
38+18	F-4F-57-MC	4658		scr	38+63	F-4F-59-MC	4781		scr
38+19	F-4F-57-MC	4662	JG71?	w/o	38+64	F-4F-59-MC	4782	Jever	wfu
38+20	F-4F-57-MC	4663		scr	38+65	F-4F-59-MC	4783	JBG36	w/o
38+21	F-4F-58-MC	4667	309th AMARG	std	38+66	F-4F-59-MC	4784		scr
38+22	F-4F-58-MC	4671	JBG35	w/o	38+67	F-4F-59-MC	4785		scr
38+23	F-4F-58-MC	4672	JG71	w/o	38+68	F-4F-59-MC	4786		scr
38+24	F-4F-58-MC	4676	???	wfu	38+69	F-4F-59-MC	4787		scr
38+25	F-4F-58-MC	4680	Fluglehrzentrum F-4F	w/o	38+70	F-4F-59-MC	4788	Jever	wfu
38+26	F-4F-58-MC	4681	Jever	wfu	38+71	F-4F-59-MC	4789	JG71	w/o
38+27	F-4F-58-MC	4685		scr	38+72	F-4F-59-MC	4790	TTC/20FS	w/o
38+28	F-4F-58-MC	4689	Jever	wfu	38+73	F-4F-59-MC	4791	Laage	pres
38+29	F-4F-58-MC	4691	Jever	wfu	38+74	F-4F-59-MC	4792	Neuburg	wfu
38+30	F-4F-58-MC	4695	Cologne/Wahn	pres	38+75	F-4F-59-MC	4793	Manching	wfu
38+31	F-4F-58-MC	4699		scr	99+91	F-4F-56-MC	4578	Manching	wfu
38+32	F-4F-58-MC	4700		scr					
38+33	F-4F-58-MC	4704	Jever	wfu					

Other Phantom users

Previous users of the Phantom include the US Air Force, US Navy and US Marines. Non-US countries that used to operate the Spook were Spain, Israel, Egypt and Australia (that only

leased them) and the United Kingdom. Now that Germany ceased operations, only six countries operate the Phantom: Egypt, Greece, Turkey, Japan, South Korea and Iran.



(Andravida, 14 April 2011, Raftopoulos Anastasios)

Greece received 84 F-4Es in two waves, one as an FMS order and one as a direct commercial sale. Currently the Hellenic Air Force still operates around 30 of the 34 Avionic Upgrade Program (AUP) versions. They are operated by 338 MDV (Mira Dioxis Vomvardismou = Bomber Pursuit Squadron) and 339 MPK (Mira Pantos Kerou = All Weather (Interception)

Squadron) from Andravida. Furthermore, the HAF received eight Reconnaissance RF-4Es under FMS and 27 RF-4E from Germany. Fifteen remain in service with 348 MTA (Mira Taktikis Anagnorisis = Tactical Reconnaissance Squadron) at Larissa today.



(Konya, 21 June 2012, Melchior Timmers)

Turkey received 182 F-4Es from the United States, eight new RF-4Es and 46 ex German Air Force RF-4Es. Of all these aircraft, today it only operates the locally designated F-4E-2020 "Terminator" and a handful of RF-4Es. The F-4E-2020 was developed by the Israeli defense industry, specifically Elbit in conjunction with Turkish Aerospace Industries. The applied update significantly extended the service-life of the Phantoms. Despite the latest update program to extend the

life of sixteen non-Terminator upgraded F-4E aircraft called "Simsek", this upgrade program failed to yield the projected results. All upgraded aircraft were withdrawn from operational use in mid-2011. The reconnaissance version is operated by 113 Filo from Eskisehir and 173 Filo from Erhaç. The Terminators are operated by 111 Filo from Eskisehir, 171 Filo from Erhaç and 132 Filo from Konya.



(Hyakuri, 27 January 2010, Dino van Doorn)

In 1968 **Japan** selected the F-4 Phantom as the successor for the JASDF (Japan Air Self Defence Force) F-104 Starfighter in the Air Defence role. Japan bought 140 F-4EJ Phantoms in total: two were built by McDonnell Douglas in St. Louis, eleven were built from kits delivered to Mitsubishi and the others were built under license production in Japan. The first examples entered service in 1971 and the last F-4EJ was delivered on May 20th 1981, making it the last new-built F-4 to be delivered ever. Compared to the USAF F-4E, the Japanese Phantoms lack the aerial refuelling system and offensive and nuclear weapon capabilities. In 1984, the indigenous designed updated prototype made its first flight, later dubbed the F-4EJ Kai (Kai means “extra” or “augmented”). This aircraft has an improved interception radar and is able to carry more modern versions of the Sidewinder and Sparrow missiles, as well as capable of flying anti-shipping missions. A total of 96 of the originally delivered F-4EJs were updated to F-4EJ Kai standard. As a replacement for the RF-86F Sabre, fourteen RF-4Es were delivered directly from the US production line,

first examples were handed over in 1974. These recce aircraft were later also modified to RF-4E Kai standard. In addition to the original RF-4Es, the JASDF converted seventeen surplus F-4EJs to the reconnaissance role, however these aircraft lack the typical recce nose and carry special recce pods. Compared to other operators of the Phantom, the JASDF had a relatively low number of crashes, 24 Phantoms of all versions were lost in accidents and not any losses in this millennium. Today, the JASDF has less than sixty operational F-4EJs (yes, a few unmodified aircraft still fly with the test unit) and F-4EJ Kais, and these are operated by 301 Hikotai at Nyutabaru, 302 Hikotai at Hyakuri and the ADTW at Gifu. No more than thirteen recce Spooks are operational and fly with 501 Hikotai from Hyakuri. Time is running out for the Air Defence version of the Phantom as the F-35 has been selected as its successor. For the moment the recce Phantoms could fly for some more time as the development of a recce version of the F-15 Eagle was stopped.



(Cheongju, 21 October 2009, Marco Pennings)

South Korea In 1968 South Korea ordered its first batch of eighteen F-4Ds. On 25 August 1969 the first six F-4Ds destined for the 11 FW/151 FS at Daegu arrived in Seoul. Late 1972, under US program Enhance Plus, a total of 36 F-5As were transferred to South Vietnam. In turn the 11 FW/110 FS at Daegu received eighteen ex-3 TFW F-4Ds; first on loan but then transferred to the ROKAF in 1975. From September 1977 a total of 37 new F-4Es were received under program Peace Pheasant II, and they formed the 11 FW/152 FS at Daegu, followed by the 153 FS at Cheongju where these squadrons formed the 17 FW in June 1979. FMS program Peace Bridge I finally brought state-of-the-art technology to South Korea as 30 F-16Cs and ten F-16Ds were received. The arrival of the F-16s was insufficient to fulfil ROKAF expansion plans, and as a stopgap measure more F-4s were acquired. 24 ex USAF Pave Spike F-4Ds formed 11 FW/159 FS at Daegu in early 1988 and that same year 10 FW/156 FS was formed at Suwon with eighteen ex-USAF F-4Es. From December 1990 another 36 ex-USAF F-4Es followed and 17 FW/157 FS was formed at Cheongju. Total F-4 deliveries are therefore circa 92 F-4Ds and 103 F-4Es. In 1990 the reconnaissance force was expanded as eighteen ex-USAF RF-4Cs entered service with 10 FW/39

Iran is the last operator of the F-4D, something that can be regarded as an act of heroism by the genuine Phantom lovers. The first sixteen F-4Ds were ordered in July 1967, followed by sixteen more, and deliveries commenced in September 1968. In 1973 Iran ordered 177 F-4Es and 16 RF-4Es. The total number of delivered Phantoms is unclear due to some clandestine deliveries but Iran received at least 227 Phantoms, but more likely around 240. Currently around 25

TRG/131 TRS at Suwon. KF-16C/Ds were first delivered by LMTAS on 2 December 1994. These deliveries allowed 159 FS to relinquish the F-4D and transfer to the 19 FW at Jungwon. At Seosan, the 20 FW received 157 FS which had relinquished her F-4Es by 2000. Delivery of the F-15K Slam Eagle (of which 61 were received) initiated the retirement of the F-4D through the disbandment of 110 FS on 28 September 2007. Official retirement followed on 16 June 2010, ending an impressive 42 years of F-4D operations. South Korea requires sixty stealth fighters to replace the F-4E under program F-X3, with first deliveries in early 2016. The F-15SE will compete with the Lockheed Martin F-35A and Eurofighter Typhoon for the contract. In addition, plans for a home-grown stealth fighter remain on the table. In 2010, the Agency for Defence Development (ADD) displayed a model of the Tactical EO-IR Reconnaissance System, which will be loaded onto the KF-16, turning them into RF-16s that will replace the RF-4C in coming years. As of early 2013, twelve RF-4Cs with 131 TRS at Suwon, and ca 70 F-4Es with 152 FS, 153 FS and 156 FS of 17 FW at Cheongju remain active. Replacement of the last F-4s is expected by 2020.

F-4Es are operated and some five F-4Ds remain in service. Despite the lack of spares and support, the IRIAF (Islamic Republic of Iran Air Force) is able to keep its Phantom fleet airworthy. The F-4Es are operated by 31 TFS from Nojeh/Hamadan, 61 TFS and 62 TFS from Yassini/Bushehr, 91 TFS from Bandar Abbas and the F-4Ds are operated by 101 TFS from Konarak/Chahbahar. The less than ten remaining RF-4Es are operated by 31 TRS from Nojeh/Hamadan.



The last F-4F Phantom to receive a special paint job was 38+13, as part of WTD-61 test unit and easy to recognize by the black and orange colours and "Don't let me die, I want to Fly" titels. Captured by Etienne Geluk on 1 July 2013 when leaving Wittmundhafen back to home base Manching after attending the JG71 Pharewell as static participant.