

Bulgarian MiG-29s



“Quintus”

May 2012

Contents

| | | |
|-----|--|---|
| 1 | History of the Bulgarian MiG-29s | 1 |
| 1.1 | During the Cold War : | 1 |
| 1.2 | The 90's and the NATO membership : | 1 |
| 2 | The upgrade program | 2 |
| 2.1 | Progress of the program : | 2 |
| 2.2 | Exterior changes : | 2 |
| 3 | Armament | 3 |
| 4 | Markings and camouflage | 3 |
| 4.1 | Markings : | 3 |
| 4.2 | Camouflage : | 3 |
| 5 | Appendix | 3 |
| 5.1 | International training exercises | 3 |
| 5.2 | Status of aircraft | 5 |
| 5.3 | Bulgarian MiG-29s on the web | 6 |

1 History of the Bulgarian MiG-29s

1.1 During the Cold War :

Isolated from the strategic west area of the Warsaw Pact to which it belongs since 1955, Bulgaria is a key state of the southern part of the Pact because of its borders with Greece and Turkey and its 130 km long Black Sea coastline.

For those reasons Bulgaria had in 1989 a well-equipped Air Force with about 400 jet fighters (mostly MiG-21s), as many as the East German Air Force. At the end of the 80's, Bulgarian high-ranking officers decided to buy a new aircraft for air superiority missions in order to replace the MiG-21, which had limited air-to-air capabilities. Therefore Bulgaria acquired 22 MiG-29s : 18 single-seat fighters and 4 MiG-29UBs, double-seat training aircraft. The aircraft were delivered in 1989 and 1990, exact dates of deliveries of some aircraft stay unclear (see Appendix). At this time, the aircraft were all based at Ravnets Air Base, in the east of the country at the Black Sea.

1.2 The 90's and the NATO membership :

Saved from the Air Force reduction imposed by the Treaty on Conventional Armed Forces in Europe (CFE) the MiG-29s kept fulfilling air defence missions during all the decade. On June 1996, a Aerobatic Team was formed. This team, the "Sea Eagles" equipped with two MiG-29s (a single-seater and a double-seater aircraft) performed from 1996 to 1999 during Open Days at Ravnets Air Base or during airshows in Bulgaria. Although MiG-29s rarely flew outside Bulgarian border, in September 1997 the "Sea Eagles" represented by Colonel Elie Milushev and Major Parush Parushev on board the MiG-29UB #04 and by Captain Rumen Radev on board the MiG-29A #15 performed during the *Czech International Air Fest*.

In 2000 Ravnets Air Base closed and the MiG-29s were relocated to Graf Ignatievo Air Base, currently the only fighter base in the country, where they conduct air policing in the *2/3 Iztrebitelna Avio Eskadrila*¹. In order to keep using MiGs for air superiority missions the Bulgarian State launched a tender in December 2001^[1] for the upgrade and the overhaul of sixteen aircraft, twelve single-seater and four two-seater. The overhaul began in 2003 but quickly stopped due to a lack of funding. At the end of 2003, all MiG-29s are grounded. A new contract with RSK MiG is finally signed on March 2006^[2]. On November 28, 2007 the first overhauled aircraft flew for the first time. At the end of 2009, all aircraft had been overhauled.

After joining the Partnership for Peace initiative in February 1994 and later NATO in 2004, Bulgaria intensified its military aerial activities. Since 2005 Bulgarian pilots have taken part in international training exercises (mostly with the USA) several times a year. Through those exercises, pilots can compare their knowledge with their allies and work on common procedures. This increase in the aerial activities is also an opportunity to work with new partners, and in November 2008, Bulgarian MiGs flew abroad for the first time since the end of the 90's to take part of *Brave Heart South*, a exercise with the Greek Air Force. To face these new activities a new maintenance contract with RSK MiG was been signed in 2009 and 12 new pilots were trained. Despite of these events, aerial activity declines since

¹Fighting Squadron

2010. Some aircraft are grounded for budgetary reasons and pilots only fly a few dozen hours per year.

Bulgarian MiG-29s are to be replaced by 2020. The new aircraft are still to be chosen.

2 The upgrade program

2.1 Progress of the program :

The overhaul and modernisation program was decided in early 2000 and lasted many years. The main cause of trouble was the lack of funding due to the fact that the Bulgarian defence budget is the smallest defence budget of all NATO countries with only 2.2% of GDP in 2006^[3] and 1.2% in 2012^[4]. With this budget, the Bulgarian Ministry of Defence cannot afford the upgrade of its combat aircraft. A tender was launched on December 16, 2001. Five candidates already involved to varying degrees in the modernization of MiG-29s in Europe responded : RSK MiG, Elbit and EADS who had previously worked on the development of the Romanian MiG-29 "Sniper", 558th ARZ already involved in the modernization of Belarusian MiGs , and IAI. RSK MiG won. A first contract was signed and work on the Bulgarian MiGs began in 2003. It includes a life extension of the aircraft. But the budget originally earmarked for this overhaul are not freed up and work had to stop at the end of 2003.

After the accession of Bulgaria to NATO in 2004, the overhaul program started again with a new constraint : MiGs had to be overhauled in Bulgaria. After some negotiations a technology transfer agreement was signed between TEREM, a Bulgarian company based at Graf Ignatievo Air Base used to work with the Ministry of Defence and RSK MiG. It included the overhaul work on site by Bulgarian and Russian personnel and the maintenance of engines and avionic systems in Russia. The \$48 million contract was finally signed on March 16, 2006. It provided the extension of the service life of sixteen aircraft. The upgrade to a new standard close to the Slovenian AS standard including new radios and IFF systems and providing compatibility with NATO standards has been cancelled because of its cost. The first overhauled MiG-29 flew for the first time on November 28, 2007^[2] and final delivery took place on March 2009.

Part of the fleet has later been equipped with civilian GPS receivers mounted on the lower structure of the HUD ² to compensate the obsolescence of the navigation system.

2.2 Exterior changes :

Modifications made during the overhaul have no consequences on the exterior aspect.

²Seen on pictures of a MiG-29UB's cockpit taken during *Thracian Star 2012*

3 Armament

According to the Stockholm International Peace Research Institute arms transfers database, Bulgaria took delivery of 100 R-27Rs medium-range air-to-air missile and 264 R-73s (probably R-73Es) short-range air-to-air missile between 1990 and 1991. It is interesting to notice that Bulgarian MiG-29s are rarely seen armed with R-73s. As far as short-range air-to-air missiles are concerned, they are more commonly equipped with R-60s which was bought for the MiG-23s in the 80's.

The most standard configuration for air defence missions seems to be two R-60s and two R-27s on the internal pylons.

4 Markings and camouflage

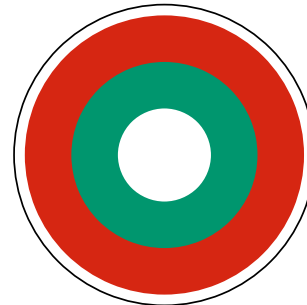
4.1 Markings :

Since 1989, two kinds of insignia have been applied to the MiG-29s. The first one, the standard Bulgarian insignia since 1948 was applied from 1989 to 1992. It consisted of a red star, symbol of the USSR, with a white-green-red (colors of the Bulgarian flag) roundel at the center. The second one, applied since 1992 consists of the white-green-red roundel only.

Some aircraft have silhouettes of A-10s or F-15s, that have been virtually shot down during combat trainings, painted in blue on the left tail. The MiG-29 #30 has four silhouettes of A-10s of the 81st FS virtually shot down during Cooperative Key 2001, the MiG #33 one silhouette of F-15.



Insignia from 1989 to 1992



Insignia used since 1992

4.2 Camouflage :

Since 1989 all Bulgarian MiG-29s are painted with the standard gray-green soviet camouflage.

5 Appendix

5.1 International training exercises

After their upgrade, the MiG-29s took part in many common trainings in order to improve their ability to work with other NATO countries. The list of the MiG-29s involved in those exercises is not necessarily comprehensive.

Viper Javelin 2005 :

Partner : USA, F-16s from the 510th and 555th Fighter Squadron (31st Fighter Wing) based at Aviano, Italy.
Place : Graf Ignatievo, Bulgaria
Dates : 20 October – 29 October
Missions : joint training, standardization of procedures.
MiG-29s : #24, #33, #15

Sentry Lion 2006 :

Partner : USA, F-15s from the 114th Fighter Squadron (173rd Fighter Wing) based at Kingsley Field Air National Guard Base, Oregon.
Place : Graf Ignatievo, Bulgaria
Dates : June 2 – June 16
Missions : joint training.
MiG-29s :

Rodopi Javelin 2007 :

Partner : USA, F-16s from the 510th Fighter Squadron (31st Fighter Wing) based at Aviano, Italy.
Place : Graf Ignatievo, Bulgaria
Dates : 5 October – 26 October
Missions : joint training, aerial intercept training.
MiG-29s : #15, #31, #12

Mako Javelin 2008 :

Partner : USA, F-16s from the 93rd Fighter Squadron (482d Fighter Wing) based at Homestead ARB, Florida.
Place : Graf Ignatievo, Bulgaria
Dates : 10 June – 19 June
Missions : combat training.
MiG-29s : #24, #26, #30, #31, #32, #37, #38, #39, #11, #12

Nickel Javelin 2008

Partner : USA, F-16s from the 555th Fighter Squadron (31st Fighter Wing) based at Aviano, Italy.
Place : Graf Ignatievo, Bulgaria
Dates : 30 October – 25 November
Missions : aerial intercept training, combat training.
MiG-29s : #12, #16

Brave Heart South 2008 :

Partner : Greece, F-16s from the 330th, 341st and 347th Squadrons (111th Combat Wing), based at Nea Anchialos AB, Greece
Place : Neas Anchialos AB, Greece
Dates : 24 November – 29 November
Missions : improving of interoperability, application of NATO procedures.
MiG-29s : #32, #11

Sentry Gold 2010 :

Partner : USA, F-15C/Ds from the 493rd Fighter Squadron (48th Fighter Wing), based at RAF Lakenheath, U.K.
Place : Graf Ignatievo, Bulgaria
Dates : 15 May – 04 June
Missions : combat training.
MiG-29s : #18, #24, #26, #31, #32, #12

Thracian Star 2010 :

Partner : USA, F-16s from the 480th Fighter Squadron (52d Operations Group), based at Spangdahlem Air Base, Germany
Place : Graf Ignatievo, Bulgaria
Dates : 1 October – 22 October
Missions : combat training.
MiG-29s : #17, #37, #39

Autumn 2011 :

Partner : Serbia, MiG-29s #102 et #108 from the 101st Squadron
Place : Graf Ignatievo and "Shabla" training range, Bulgaria
Dates : 25 August – 26 August
Missions : live missile firing exercise.
MiG-29s : #17, #24, #14

Thracian Star 2012 :

Partner : USA, F-16s from the 555th Fighter Squadron (31st Fighter Wing) based at Aviano, Italy.
Place : Graf Ignatievo, Bulgaria
Dates : 17 April – 11 May
Missions : air combats, tactical interceptions, and combat manoeuvres.
MiG-29s : #16, #22, #39

5.2 Status of aircraft

Serials of some aircraft changed during the 2000's. MiG-29UB's, previously #01, #02, #03 and #04 became #11, #12, #33 and #14, and the single-seat fighters #27, #28 and #29 became #37, #38 and #39. Serials given below are current serials. Dates of deliveries are quoted from the Bulgarian forum *airgroup2000* (marked "1") or from *aeroflight.co.uk* and *airforce-bg.com* (marked "2").

Active overhauled MiG-29s :

| Variant | Serial | cn | Delivered |
|--------------|--------|--------------|---|
| MiG-29 9.12A | 15 | 2960526321 | 19/06/1989 ¹ |
| MiG-29 9.12A | 16 | 2960526322 | 19/06/1989 ¹ |
| MiG-29 9.12A | 17 | 2960526324 | 19/06/1989 ¹ |
| MiG-29 9.12A | 18 | 2960526325 | 19/06/1989 ¹ |
| MiG-29 9.12A | 23 | 2960532377 | 27/06/1989 ¹ |
| MiG-29 9.12A | 24 | 2960532379 | 27/06/1989 ¹ |
| MiG-29 9.12A | 26 | 2960532382 | 27/06/1989 ¹ |
| MiG-29 9.12A | 31 | 2960535103 | 19/09/1990 ¹ |
| MiG-29 9.12A | 32 | 2960535104 | 19/09/1990 ¹ |
| MiG-29 9.12A | 37 | 2960532383 | 27/06/1989 ¹ |
| MiG-29 9.12A | 38 | 2960535100 | 19/09/1990 ¹ |
| MiG-29 9.12A | 39 | 2960535101 | 19/09/1990 ¹ |
| MiG-29 9.51 | 12 | N50903013394 | 15/06/1989 ¹ |
| MiG-29 9.51 | 14 | N50903018945 | 09/1990 ¹ or 1989 ² |
| MiG-29 9.51 | 33 | N50903018908 | 09/1990 ¹ or 1989 ² |

Stored aircraft :

| Variant | Serial | cn | Delivered |
|--------------|--------|------------|--|
| MiG-29 9.12A | 19 | 2960526333 | 19/06/1989 ¹ |
| MiG-29 9.12A | 20 | 2960526334 | 19/06/1989 ¹ |
| MiG-29 9.12A | 21 | 2960526335 | 09/01/1990 ¹ or 1989 ² |
| MiG-29 9.12A | 22 | 2960526336 | 09/01/1990 ¹ or 1989 ² |
| MiG-29 9.12A | 30 | 2960535102 | 19/09/1990 ¹ |

Destroyed aircraft :

On June 24, 1995 the MiG-29 #25 crashed during a low level flight near Ravnetz Air Base. The pilot, Colonel Ivan Daev, was killed.

On April 26, 2012, the MiG-29UB #11 caught fire short after take-off during *Thracian Star 2012*. It crashed in the area of Graf Ignatievo Air Base. Both pilots, major Elijah Doychinov and captain Peter Metodiev, ejected safely^[5].

5.3 Bulgarian MiG-29s on the web

- Bulgarian forum, many new about the MiG-29s <http://forum.aeropress-bg.com/viewtopic.php?f=1&t=80>
- Bulgarian forum, many pictures of the aircraft from early 90's until today <http://airgroup2000.com/forum/viewtopic.php?t=5439>
- Bulgarian website, news and many pictures of the aircraft from early 90's until today <http://pan.bg/>

References

- [1] HOWARD GETHIN. Russia chases Bulgarian MiG-29 upgrade tender. *The Russia Journal*, (143), Décembre 2001.
- [2] Bulgarian MiG-29s back in service. *Take-off Magazine*, page 10, Mai 2008.
- [3] Financial and Economic Data Relating to NATO Defence. http://www.nato.int/nato_static/assets/pdf/pdf_2011_03/20110309_PR_CP_2011_027.pdf, Mars 2011.
- [4] Sofia News Agency. Bulgarian military budget to fall short of 1.5%/GDP target in 2012. http://www.novinite.com/view_news.php?id=133328, Octobre 2011.
- [5] AERO Magazine. No injuries in the incident in the crash of the MiG-29. <http://aeropress-bg.com/novini/36-news/967-mo-nqma-postradali-pri-incidenta-s-mig-29.html>, April 2012.