

ASSAD'S AIRPOWER

The Syrian Arab Air Force (SyAAF)

Updated 4th April 2017



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SyAAF Position in Syrian Armed Forces

The SyAAF has been an independent service in the Syrian armed forces, since its formation in 1948 but is distinct from the Air Defence Force, which controls Syria's network of air defence radars and surface-to-air missile batteries.

The SyAAF has a long tradition of political involvement in the government of Syria, supporting the nationalist and secular Syrian Ba'ath Party. President Bashar al Assad's father, Hafez Assad, was a former commander of the SyAAF in the 1960s and 1970s.

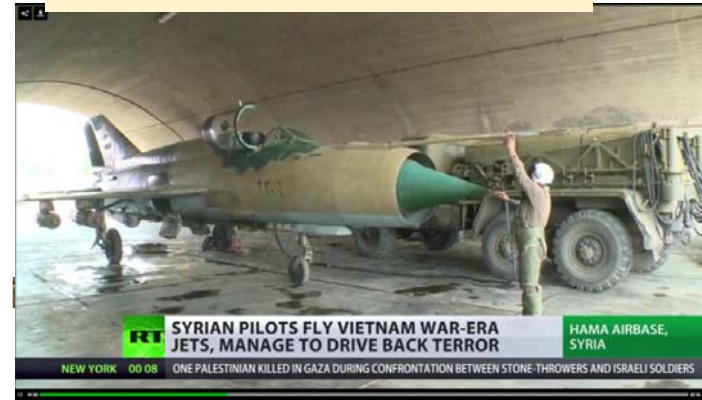
The SyAAF's Intelligence Directorate is one of Syria's most powerful security agencies. It played a major role in crushing the Muslim Brotherhood uprising in the 1980s and in 2011 was in forefront of attempts to put down the "Arab Spring" uprising.

The SyAAF has its own special forces detachments and air force officers serve in senior command positions in the Special Forces and Airborne Forces.

The SyAAF has strong links to the Russian air force and defence industry stretching back to the 1960s because of the air force's dependence on Soviet era military hardware.

All SyAAF commanders, aircrew and ground maintenance personnel are long term professionals. Air base ground defence personnel are conscripts.

The SyAAF uses Soviet supplied equipment, such as this MiG-21 at Hama AB, November 2015
Source: <https://www.rt.com/news/321151-syrian-airforce-hama-base/>



MiG-17 gate guard at Dier Ez Zor AB with SyAAF ground protection team
Source: @ivansidorenko

General Issam Hallaq has been Chief of Air Force Staff since 2010. Little is known of him outside Syria, expect that he is an Alawite. No picture is available of him.



Hafez al Assad, the father of Syria's current president, was chief of staff of the SyAAF between 1964 and 1971.

SyAAF Contribution to the Syrian War Effort

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SyAAF MiG-21 carries out a bombing run over Hama province 2015
<https://www.rt.com/news/321151-syrian-airforce-hama-base/>



SyAAF Mi-24 during a low level close air support attack near Palmyra, November 2015
<https://www.youtube.com/watch?v=niYtPJErDI0>

Since the start of the civil war in 2011, the SyAAF has played an important role:

1. Offensive strike operations against rebel forces and population centres
2. Airlift of supplies and personnel to isolated pro-government enclaves, and between bases
3. SyAAF intelligence and special forces contingents are in forefront on ground operations against rebels. SyAAF Colonel Suheil Hassan commands the Tiger Force special operations unit.
4. SyAAF Air Bases act as “anchors” in army ground defensive positions, using their anti-aircraft artillery in the direct fire role against ground targets.
5. The SyAAF has developed and employed one of the most iconic weapons of the Syrian civil war, the infamous “barrel bomb”.

SyAAF in 2016

Estimated SyAAF personnel strength in January 2016 is 500 aircrew, 5000 maintenance personnel, 1,000 command staff and around 10,000 ground defence and support personnel – some 25% of its pre-war strength. Its inventory, includes 245 fixed wing combat aircraft, 90 helicopters and 26 transport aircraft, operating from 15 airbases and airports.

According to reporting by the *Syrian Observatory for Human Rights*, from late 2014 to January 2016, the SyAAF was estimated to have carried out 45,865 strike sorties, or 3,057 strike sorties a month, excluding airlift, reconnaissance and support missions. After the start of Russian intervention in September 2015, the SyAAF sortie rate rose by 40% per month.



SyAAF personnel are some of the most highly motivated in the Syrian armed forces. The mass execution of captured SyAAF personnel by Islamic State at Tabqa and Palmyra airbases and by the Nusra Front at Abu Dhour has created a desire among SyAAF personnel for revenge. The SyAAF is an implacable opponent of Islamic State and other Jihadhi groups. Images: Amaq News/Nusra Front social media



SyAAF's Aircraft and Helicopters

SyAAF Ground Attack Aircraft

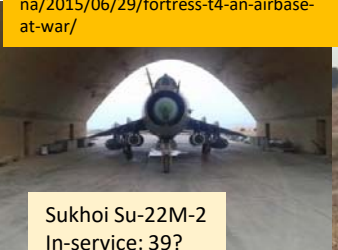


Mikoyan MiG-23
In-service: 87?

<https://www.rt.com/news/321151-syrian-airforce-hama-base/>



Aero L-39 Albatross
In-service: 19



Sukhoi Su-22M-2
In-service: 39?



Mikoyan MiG-21
In-service: 48?

<https://www.rt.com/news/321151-syrian-airforce-hama-base/>

SyAAF Strike Attack Aircraft (armed with Precision Guided Munitions)



Sukhoi Su-24M2
In-service: 20
(2 new aircraft delivered July 16, with 8 more on order from Russia)

Source: <https://www.bellingcat.com/news/mena/2015/06/29/fortress-t4-an-airbase-at-war/>

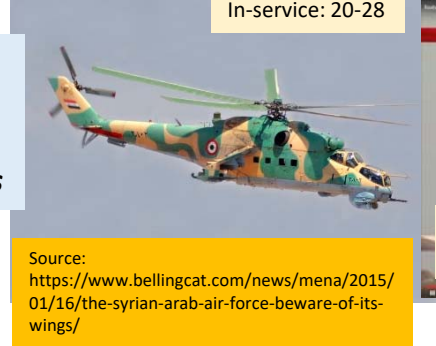


Mikoyan MiG-29SM/RB
In-service: 20-24
Also has air defence role

Source: <http://www.scramble.nl/orbats/syria/airforce>

The number of aircraft in service has been derived from deducting combat losses from the pre-civil war SyAAF inventory, analysis of satellite imagery of SyAAF bases and news media report from SyAAF bases. It is only an estimate is accurate to within 10 aircraft for the most numerous types (MiG-21/23, L-39 Mi-8/17 and Su-22). For the smaller fleets (Su-24, Mi-24, transport aircraft) the data has a higher level of accuracy.

SyAAF Attack and Transport Helicopters



Mil Mi-24/25
In-service: 20-28

Source: <https://www.bellingcat.com/news/mena/2015/01/16/the-syrian-arab-air-force-beware-of-its-wings/>



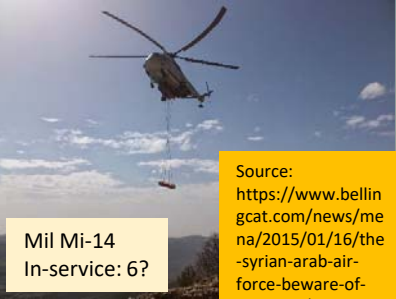
Aerospatiale SA-342 Gazelle
In-service: 10?

<https://www.youtube.com/watch?v=rkVkmz52fGo>



Mil Mi-8/17
In-service: 50+

Source: <https://www.bellingcat.com/news/2015/05/10/battlefront-syria-kweres-airbase/>



Mil Mi-14
In-service: 6?

Source: <https://www.bellingcat.com/news/mena/2015/01/16/the-syrian-arab-air-force-beware-of-its-wings/>



Kamov Ka-28
In-service: 4?

Source: Luftwaffees blog

Airlift – Syria Air

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The state-owned airline, Syria Air, is in effect the airlift wing of the SyAAF, providing cargo, passenger and VIP airlift support internally and internationally. Its aircraft are civilian registered to ease their movement internationally.

Ilyushin Il-76
In-Service: 4
Strategic Transport



Airbus A320
In-Service: 5
Passenger Airliner



Airbus A300-605
In-Service: 1
Passenger Airliner
(purchased summer 2016)
Source: @BabakTaghvaei

Dassault Falcon 900
In-Service: 1
VIP Transport



ATR-72-500
In-Service: 5
Passenger Airliner



Eurocopter Dauphin
In-Service: 1?
VIP Transport

Tupolov Tu-134
In-Service: 1?
VIP Transport



AirDassault Falcon 20E
In-Service: 2
VIP Transport



Abandoned Syria Air jets at Damascus International Airport, including 9-assorted x Tupolov Tu-134, 1 x Airbus A320, 1 x ATR-72
Source: @orynxspioenkop 8 Feb 16

Antonov An-26
In-Service: 4
Tactical Transport

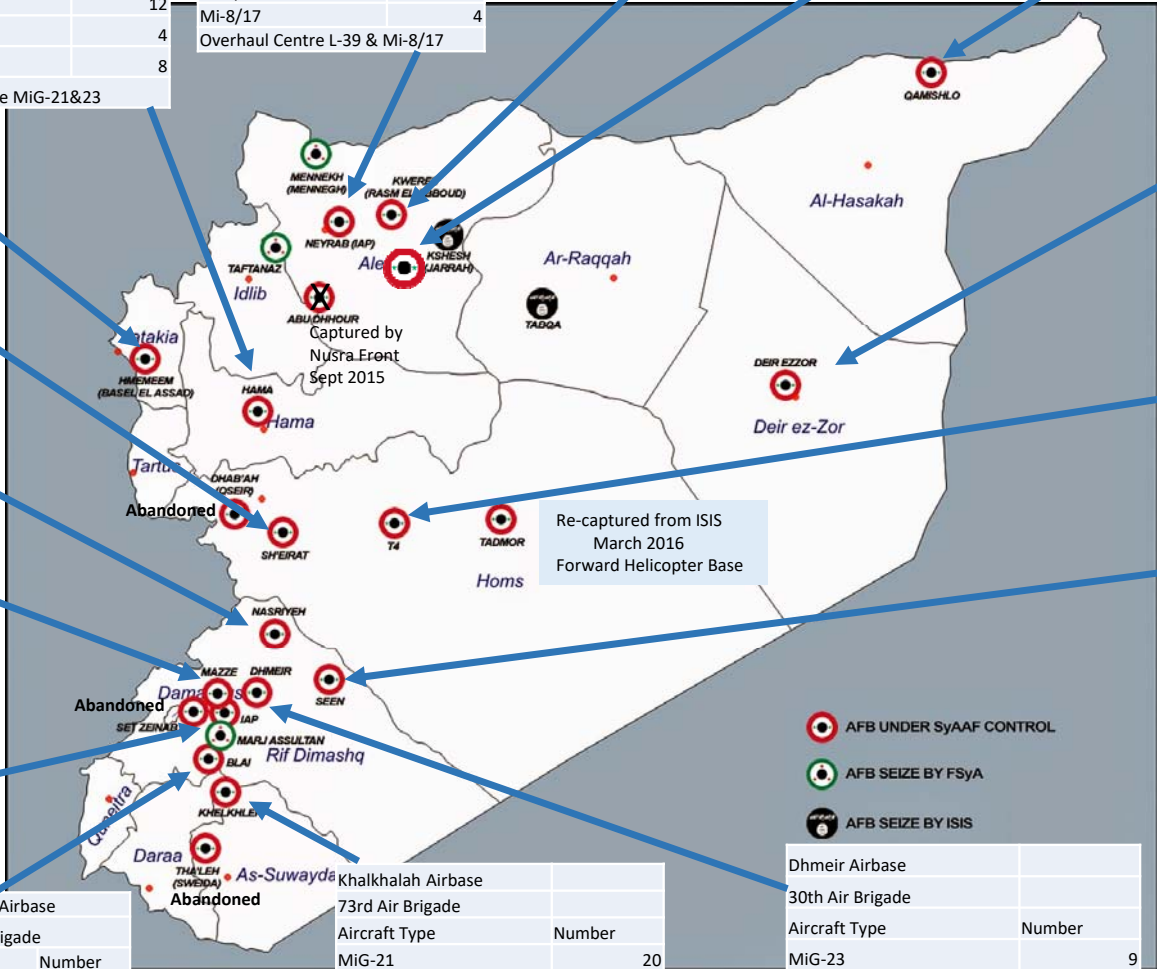


Yakovlev Yak-40
In-Service: 3
VIP Transport



Unless marked, the imagery on this slide is source from stock agencies

SyAAF Order of Battle and Deployment



Aircraft Type	Number
Mi-8/17	5
Mi-24	3
618th Naval Helicopter Squadron	
Mi-14	6
Ka-28	4

Aircraft Type	Number
MiG-21	19
MiG-23	12
Mi-24	4
Mi-8/17	8
Overhaul Centre MiG-21&23	

Aircraft Type	Number
L-39	10
MiG-23	8
Mi-8/17	2
Mi-8/17	4
Overhaul Centre L-39 & Mi-8/17	

Aircraft Type	Number
Mi-8/17	3
Mi-24	2?

Aircraft Type	Number
Mi-8/17	3?
Mi-24	3?

Aircraft Type	Number
Mi-8/17	1
Su-24	2
MiG-21	5

Aircraft Type	Number
Su-22M-4	10
MiG-23	18

Aircraft Type	Number
MiG-23	10

Aircraft Type	Number
Mi-8	15?
Gazelle	10
MiG Aircraft Company site	

Aircraft Type	Number
Il-76	4
Falcon 20E/900	3
An-26	2
Airbus A320	6
ATR-42/72	2
Yak-40	3
Overhaul Centre large aircraft	

Aircraft Type	Number
Mi-24	20+

Aircraft Type	Number
MiG-21	20
MiG-23	12
Su-22	10

Aircraft Type	Number
MiG-23	9
Su-22M-3	9
Overhaul Centre MiG-23&Su-22	

Aircraft Type	Number
MiG-21	9
L-39	2
Mi-8/17	6

Aircraft Type	Number
Su-24M2	20
SU-22M-4	10
MiG-25	4?
Mi-8/17	4
L-39	7
Overhaul Centre Su-24	

Aircraft Type	Number
MiG-23BN	14
MiG-29SM	24
Overhaul Centre MiG-23/29	

- AFB UNDER SyAAF CONTROL
- AFB SEIZE BY FSyA
- AFB SEIZE BY ISIS

Re-captured from ISIS
March 2016
Forward Helicopter Base

Captured by Nusra Front
Sept 2015

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SyAAF Fixed Wing Strike Operations

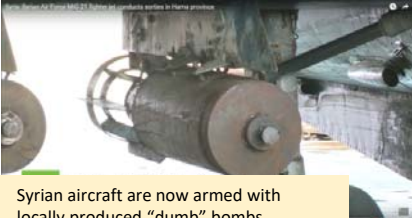
Syrian strike operations involve predominately the MiG-21, MiG-23 and Su-22 units

The MiG-21, MiG-23 and Su-22 units are distributed around Syria to ensure air support is available across every battle front. They operate predominately in the local area around their home air bases. They are armed with unguided 'dumb' bombs or forward firing rocket pods.

The Su-24MK and MiG-29SM/RG units are the most capable assets in the SyAAF's inventory and are the service's only aircraft capable of employing precision guided munitions. They operate in a strategic role, striking targets across throughout the country. These aircraft are based in the central desert region and are often called upon to hit opposition forces threatening their local area.

The majority of SyAAF pilots are aged in the their 40s and 50s. They have tremendous combat experience but the loss of the SyAAF's main training bases to rebel forces means there is shortage of younger pilots coming through the ranks, which is a long term issue for the service.

Su-24MKs fly strategic missions throughout Syria from their base at T-4 in the centre of the country
Source: @ald_ada



Syrian aircraft are now armed with locally produced "dumb" bombs.
Source: <https://www.rt.com/news/321151-syrian-airforce-hama-base/>



SyAAF pilots are now mostly "middle aged" because of a breakdown in its training organisation
Source: <https://www.rt.com/news/321151-syrian-airforce-hama-base/>



Syria: Syrian Air Force MiG-21 fighter jet conducts sorties in Hama province

The MiG-21 force is now dedicated to air-to-ground operations with 'dumb' bombs
Source: <https://www.rt.com/news/321151-syrian-airforce-hama-base/>



The Su-22 is the most versatile and robust SyAAF ground attack jet, armed with bombs and rockets
Source: SANA



RT SYRIAN PILOTS FLY VIETNAM WAR-ERA JETS, MANAGE TO DRIVE BACK TERROR HAMA AIRBASE, SYRIA
BEIJING 13:09 CHEMICAL ARMS WATCHDOG REVEALS MUSTARD GAS WAS USED IN SYRIA

The MiG-23 is the SyAAF's most numerous type in service
Source: <https://www.rt.com/news/321151-syrian-airforce-hama-base/>

A MiG-21 provides close air support to outside the perimeter of Dier Ez Zor airbase
Source: <https://www.youtube.com/watch?v=2FvMqx3Lbh4>



SyAAF Helicopter Operations

The SyAAF helicopter force has borne a disproportionate burden of the service's involvement in the civil war.

Mi-8/17 helicopters are deployed to every battlefield, flying transport and in attack missions. They flying regular missions to re-supply isolated government out-posts behind rebel lines. Small units of Mi-8/17s and Mi-24/25s are detached to airbases around the country to ensure helicopter support is available to all army units.

The Mi-24/25 attack helicopter force is used aggressively, with detachments based at forward air bases in every battlefield. In desert regions of the central Syria, Mi-24/25s have been filmed flying low level attack missions against rebel positions, using rockets and guns to engage targets.

The Mi-24/25 force is now being used aggressively to fly low level close air support strikes
Source: <https://www.youtube.com/watch?v=niYtPJErDIO>



The Gazelle anti-tank and surveillance force remains based at Mezze airbase outside Damascus. operation to seize Palmyra.
Source: <https://www.youtube.com/watch?v=rkVkmz52fGo>



A combined Mi-24/25 and Mi-8/17 unit on alert for a mission
http://arabic.sputniknews.com/arab_world/20151129/1016543779.html



SyAAF helicopters fly a shuttle service to forward bases to move troops to the frontline. These are Iraqi Shia "volunteers". The Syrian pilots are in the beige flying suits.
Source: @ivansidorenko



SyAAF Gazelle over Palmyra, 23rd March 2016
<https://www.youtube.com/watch?v=JPFeDCZkr3M>

“Barrel Bombing”

The most infamous and controversial aspect of SyAAF operations by its helicopters are so-called “barrel bombing” attacks on urban areas. These involve the use of “unguided” Syrian-made bombs, dropped from medium altitude. SyAAF helicopters have been filmed dropping up to four barrel bombs at a time in a single pass, to achieve “area effects”. These attacks are described by rebels as indiscriminate attacks on civilians. In the summer of 2016 rebel groups have claimed SyAAF helicopters made several attacks using chlorine gas filled barrel bombs



A Mi-24/25 drops a barrel bomb on Ter Maela, Hama Province, January 2015
Source:
<https://www.youtube.com/watch?v=7MWx4yM9uD0>

A Mi-8/17 crewman prepared to launch a barrel bomb
Source:
<https://www.bellingcat.com/news/mena/2015/07/08/a-brief-open-source-history-of-the-syrian-barrel-bomb/>



A Mi-8-17 with its rear cargo doors removed to allow barrel bombing
Source:
<https://www.bellingcat.com/news/mena/2015/01/16/the-syrian-arab-air-force-beware-of-its-wings/>



A Mi-8/17 crewman prepared to launch a barrel bomb
Source:
<https://www.bellingcat.com/news/mena/2015/07/08/a-brief-open-source-history-of-the-syrian-barrel-bomb/>

Barrel Bombs captured by rebels at Taftanaz Airbase in 2013
Source:
<https://www.bellingcat.com/news/mena/2015/07/08/a-brief-open-source-history-of-the-syrian-barrel-bomb/>

SyAAF Airbase Infra-Structure

SyAAF airbases play an important part in Syrian ground defence plans.

Each SyAAF has a dedicated ground defence battalion, with some 500 troops equipped with anti-aircraft missiles and guns, armoured vehicles and tanks. Two SyAAF bases – Kwaieres and Dier Ezor - have withstood long term sieges by Islamic State forces.

All the main SyAAF air bases have hardened shelters to protect aircraft, key ground support equipment and underground ammunition dumps.



Hama airbase is typical of SyAAF, featuring extensive hardened shelters built after the 1967 Israeli air strikes which devastated SyAAF parked in the open
Source: <https://www.rt.com/news/321151-syrian-airforce-hama-base/>



Su-22 on alert inside hardened shelters at T-4 airbase in central Syria.
Source: <https://www.bellingcat.com/news/mena/2014/11/03/has-the-islamic-state-set-its-eyes-on-t4-tiyas/>



The SyAAF ground defence unit protected Kwaieres Air Base through two years of siege.
Source: <https://www.bellingcat.com/news/2015/05/10/battlefront-syria-kwaieres-airbase/>

A hardened shelter with doors at Tadmur (Palmyra) airbase in central Syria.
Source: <https://www.bellingcat.com/news/2015/05/21/islamic-state-captures-tadmur-palmyra-in-new-sudden-streak-of-offensives/>



New Infra-structure – September-December 2015



Airbus Defence and Space imagery from 8 November showing Russian helicopters deployed at Syria's Al-Shayrat Air Base and the final stages of the resurfacing of the southern runway.
© CNES 2015, Distribution Airbus DS / © 2015 IHS: 1535957



© 2013 TerraServer, DigitalGlobe

Since the deployment of the Russian air group in September 2015 new infra-structure construction has been underway at two sites. The runway at SyAAF airfield at Shayrat in Homs province has been improved (above). A new helicopter base has been constructed at Istamo (right), north west of Latakia airbase to accommodate helicopters that had to be re-located to make room for the Russian air group at the Latakia's main airport.

SyAAF Logistics

© timripley@hotmail.com

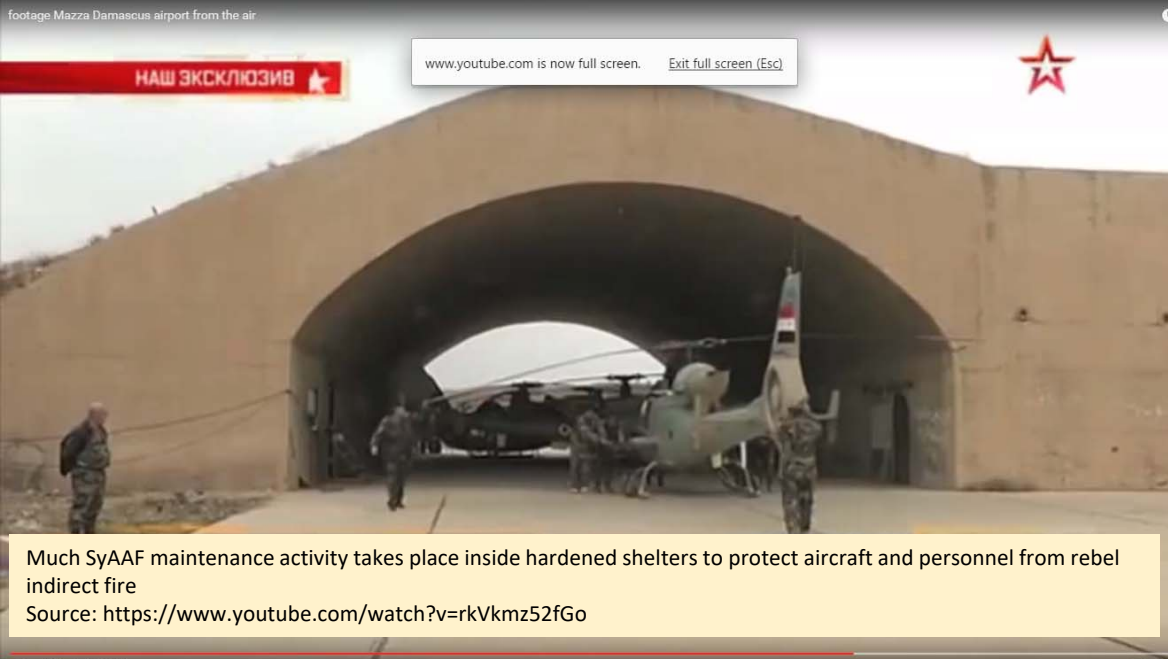
Hama Airbase in November 2015 shows the Soviet era support vehicles still in use with the SyAAF
 Source: www.rt.com

Major upgrades of the SyAAF's Su-24 and MiG-29 fleets has taken place in Russian over the past decade
 Source:
<https://www.bellingcat.com/news/mena/2015/01/16/the-syrian-arab-air-force-beware-of-its-wings/>

The SyAAF's maintenance and logistic support operation is one of its strengths and plays an important part in ensuring the service's aircraft can keep flying at their current high tempo.

A network of five overhaul centres across the country ensures that aircraft and helicopters undergo regular maintenance. This accounts for the low accident rate among SyAAF aircraft.

Russian support is also an important factor in ensuring the SyAAF remains in the fight, with spares parts being made available. Dozens of SyAAF aircraft have also received capability upgrades in Russia and Belarus over the past decade



Much SyAAF maintenance activity takes place inside hardened shelters to protect aircraft and personnel from rebel indirect fire
 Source: <https://www.youtube.com/watch?v=rkVkmz52fGo>



SyAAF armourers have expertise in operating precision guided munitions, such as this French-made HOT, but they are in short supply
 Source:
<https://www.youtube.com/watch?v=rkVkmz52fGo>

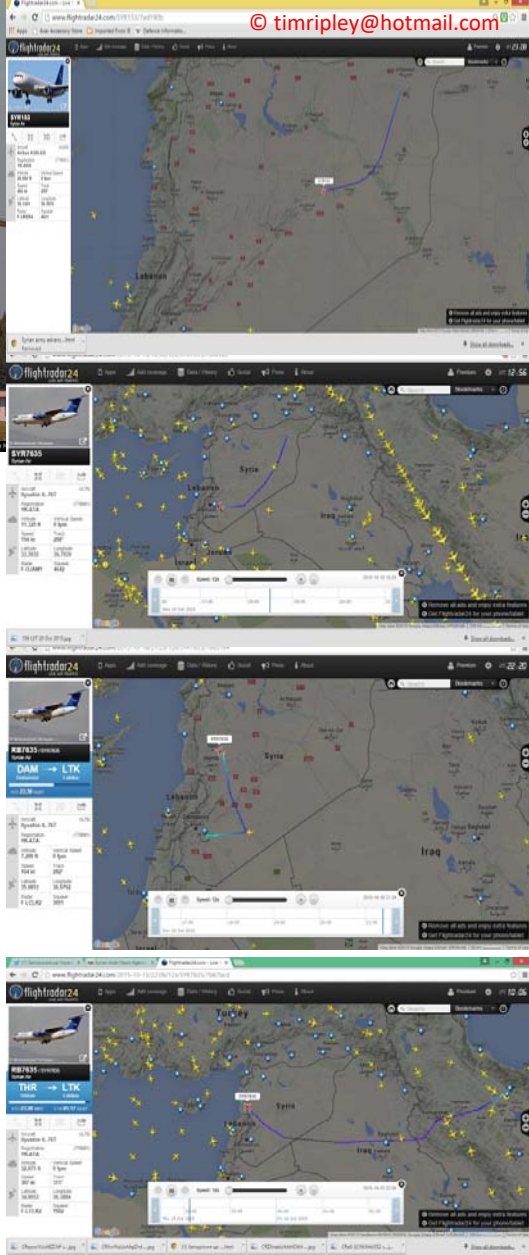
SyAAF aircraft is now locally produced in factories at Aleppo airport and the Safirah industrial complex.
 Source:
<https://www.rt.com/news/321151-syrian-airforce-hama-base/>

RT SYRIAN PILOTS FLY VIETNAM WAR-ERA JETS, MANAGE TO DRIVE BACK TERROR HAMA AIRBASE, SYRIA

Airlift Operations



Syria Air II-76 transports fly daily shuttle missions around Syria carrying cargo and passengers to besieged and isolated bases. Regular flights are also made to Tehran in Iran to bring in supplies and volunteer fighters. It is possible to track these aircraft on the Flightradar24.com website.
 Source: stock pix(above), Flightradar24.com (right)



Russian and Iranian aircraft and helicopters are participating in a multi-national airlift to bring in Iraqi and Iranian Shia “volunteer” fighters to Syria. Russian Mi-8s (above), Iranian Airbus A300, C-130s and Il-76s (below), with FlyDamas Boeing 737-500 (on far right below)
 Source: via, @ivansidorenko



SyAAF, RuAF and Iranian IRGC Attrition since 2011, as at 4 April 2017

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Date	Type	Number Aircraft	Location	Cause	Fate of Crew
04/03/2017	MIG-21	1	northern Idlib/Aleppo	AAA	pilot ejected into Turkey
05/02/2017	Su-22M3	1	Neyreb AB	technical fault	1 x KIA
10/12/2017	Gazelle	1	17-4 airbase	shoot down	2 x KIA
10/12/2017	MIG-23	1	Hayyan gas field	technical fault/shoot down?	?
03/12/2017	Su-33 (RuN)	1	Mediterranean	technical fault	recovered by CSAR
03/12/2017	L-39	1	Aleppo city	technical fault	1 KIA
14/11/2017	MIG-29KUB (RuN)	1	Mediterranean	technical fault	recovered by CSAR
03/11/2016	Mi-24 (RuAF)	1	east Palmyra	hit on ground	recovered by CSAR
18/09/2016	MIG-21	1	Dier Ez Zor	23mm AAA	1 x KIA
03/09/2016	L-390Z	1	150km south Homs city	technical fault	1 x KIA
02/09/2016	Gazelle	1	north Hama	TOW ATGW	2 x KIA?
01/08/2016	Mi-8MTSHV (RuAF)	1	Idlib province	technical fault?/AAA	5 x KIA
28/07/2016	MIG-23ML	1	eastern Qalamoun	flew into mountain	1 KIA
20/07/2016	L-3920	1	Rural Hama	AAA	2 x KIA
14/07/2016	Mi-8/17	1	Baltaryeh, East Ghouta	AAA	2 x KIA
14/07/2016	MIG-21	1	Dier Ez	technical fault/AAA	1 x KIA
08/07/2016	Mi-35	1	east Palmyra	AAA or Manpad?	2 x Russian aircrew KIA
01/07/2016	Mi-25	1	near Blai airbase, Damascus	Manpad	3 x KIA
01/07/2016	Su-22 M3	1	Jayrud, eastern Qalamoun	technical fault?/AAA	1 x POW, later executed
05/07/2016	MIG-23ML	1	Maydaa, in Eastern Ghouta	??	
27/06/2016	MIG-23Bn	1	near Seen/Saiqal Airbase	flew into mountain	1 x KIA
19/06/2016	MIG-21	1	Hama airbase	technical fault	pilot KIA, 2 civilians on ground
22/04/2016	MIG-23 (67 Sqn)	1	close to Dumayr AB, Damascus	engine failure	1 x POW
12/04/2016	Mi-28N (RuAF)	1	eastern Homs	accident	2 x KIA
05/04/2016	Su-22U (twin)	1	AI Eis, Aleppo	AAA/Manpad?	1 x KIA, 1 x POW
12/03/2016	MIG-21	1	Kafir Nabudah, North Hama	AAA/Manpad?	1 x KIA
24/11/2015	Su-24 (RuAF)	1	northern Latakia	shot down by TUAF F-16	1 x KIA, 1 x rescued
24/11/2015	Mi-8 (RuAF)	1	northern Latakia	AAA	
04/11/2015	MIG-23	1	Hama	AAA	1 x KIA
08/10/2015	u/l helo	1	Kafir Nadoubia, Hama	AAA?	?
23/09/2016	MIG-217	1	Quenitra, Golan	Israeli SAM? Fighter	?
17/09/2015	Su-22M4	1	Jazal oil field, Homs	?	?
03/08/2015	Mi-17	1	Aleppo?	MANPAD	3?
11/06/2015	Su-24	1	Dara'a	23mm AAA	2
24/05/2015	Mi-8/17	1	Kwaires, Aleppo	AAA?	3
16/05/2015	Mohajjar UAV (IRGCAF)	1	Turkish border	TUAF F-16 with 2 x AIM-9	??
24/04/2015	MIG-23ML	1	near Khalkhalah, Sweida	crash?	1 x suicide to prevent capture
22/03/2015	Mi-14	1	Idlib	AAA?	1 x executed, 4 x POW, 1 x missing
30/01/2015	?? Fighter	1	Damascus region	claimed by ISIS	??
18/01/2015	An-26	1	Abu al Duhor AB, Idlib	AAA	35 x KIA
23/09/2014	Su-24	1	Golan	IDF Patriot SAM	2 x KIA?
23/03/2014	MIG-23	1	Turkish border	shot down by TUAF F-16	??
16/01/2014	Mi-8/17	1	??	shot down by rebel SA-8	KIA?
16/09/2013	Mi-8/17	1	northern Latakia	shot down by TUAF F-16	1 x executed by rebels
31/9/2013	u/l helo	1	??	possible shot down by rebel SA-8	??
30/06/2013	Mi-8	1	Zahra, North Aleppo	shot down by missile	17 KIA
28/02/2013	Mi-8/17	1	Damascus Int Airport	mid air with airliner	??
14/02/2013	Su-22M4	1	??	MANPAD	??
28/11/2012	Su-24	1	??	MANPAD	??
17/10/2012	Mi-8/17	1	Damascus region	AAA	exploded mid air, all KIA
15/10/2012	L-39	1	Aleppo region	AAA	2 x POW
13/10/2012	L-392A	1	Aleppo region	23mm AAA	2 x KIA
04/09/2012	MIG-21	1	Abu al Duhor AB, Idlib	14.5mm AAA	??
30/08/2012	MIG-21	1	Abu al Duhor AB, Idlib	AAA	??
27/08/2012	Mi-8/17	1	Damascus region	AAA	??

Total Losses in Air
SyAAF 47 (incl 16 x helo)
(plus SyAAF 114 destroyed or abandoned on ground)
RuAF & RuN 6 (incl 3 x helo)
IRGC 1 (UAV)

Cause of Losses

18 x AAA
 4 x TUAF F-16
 6 x MANPAD/SAM/ATGW
 11 x crash/technical fault
 8 x unknown

The SyAAF and its Russian allies have unchallenged control of the air over Syria. Rebel forces have only shot down under 30 aircraft and helicopters in five years of civil war.