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*Astronaut & Top Notch Opinions*

Space Shuttle astronaut Dr. Fred W. Leslie:


International Space Station astronaut Umberto Guidoni

... told EU Commission Chairman Romano Prodi that "the space station gave a perfect view of the effect of human damage to the [atmospheric] environment": [http://www.cnn.com/...](http://www.cnn.com/...)

Astronaut Dr. Andy Thomas:

"One of the most readily visible signs of human presence, is the occurrence of contrails from aircraft in the upper atmosphere. These are crystals of ice formed from water, a byproduct of the combustion process in the aircraft engines, and which is collected into the wake vortices of the aircraft. They are very long lasting, and can be seen over virtually all parts of the world as white streaks across the sky. They can be striking around cities that are major air traffic hubs, and can oftentimes be seen radiating out from these cities, like spokes in a wheel" (From an account of visual observations from his 141 day stay onboard Space Shuttle / MIR, STS-91, in 1998): [http://shuttle.nasa.gov/history/...](http://shuttle.nasa.gov/history/...)

Astronaut Guy Gardner:

"... Guy Gardner, associate FAA administrator for regulation and certification, agreed. The former astronaut said that from space, 'you look down and don't see boundaries. What you do see is contrails of airplanes, especially on the North Atlantic. '" (Aviation Week and Space Technology September 12, 1998): [http://www.awgnet.com/...](http://www.awgnet.com/...)

Shuttle-MIR astronaut Jerry Linenger:

- wrote to his son, who was en route Russia: "I'll be looking for the contrail of your jet as you head across the ocean (usually, easily seen from space...)": [http://spaceflight.nasa.gov/history/...](http://spaceflight.nasa.gov/history/...)

Astronaut Dr. George D. Nelson:

"It is striking that everywhere you look out the windows of the Space Shuttle you can see some evidence of human activity. Ships with wakes, airplanes with contrails, fires, electric lights, agriculture and engineering": [http://www.scimathmn.org/...pdf](http://www.scimathmn.org/...pdf)

President Clinton

takes a balanced view on contrails: "... The real test of this new airport is not simply whether the skies are streaked with the contrails of jet planes. The real test of this new airport is the growth it generates, the jobs it creates, and the hope it inspires. It is found in the eyes of the children living on farms, and in these mountains, children who look skyward and imagine the places they will go": [http://www.dot.gov/affairs/...](http://www.dot.gov/affairs/...)

Former Senator Wendell Ford:

"In the early part of this century, a community was hard pressed to survive without a railroad station. Today, our airports have replaced the railroad station and the train's tracks across the countryside have been replaced by the plane's contrails across the open skies. Just as railroads played a critical role in the economy of yesterday, so too do airplanes and airports play an important role in today's economy" (statement Before the U.S. House of Representatives): [http://www.nata-online.org/...](http://www.nata-online.org/...)

United States Environmental Protection Agency:

“Currently, there are no regulations addressing contrails and their atmospheric effects” (September 2000): http://www.epa.gov/... from click

Dr. Cheryl E. Merritt, Yale University:

“The jet airplane has revolutionized travel since about 1960. It has brought people and cultures closer together. It has created environmental problems. Harmful chemicals sift down from the smoky trails of low-flying jets. The scream of jet engines is constantly heard by people who live near big-city airports. Jet aircraft, particularly the supersonic transport (SST) could endanger stratospheric air pollution with consequent changes in climate. Jet exhaust contains water, CO2, oxides of nitrogen, and particulate matter. It is speculative just how harmful these pollutants can be”: http://www.yale.edu/...

Paul R. Ehrlich (1968):

“The causal chain of the deterioration [of the environment] is easily followed to its source. Too many cars, too many factories, too much detergent, too much pesticide, multiplying contrails, inadequate sewage treatment plants, too little water, too much carbon dioxide—all can be traced easily to too many people” (quoted by Adil Najam in Population Research and Policy Review, Vol. 15 No. 1, p.1-17): http://www.mit.edu/...

Dr. Richard Witt, The International Association ’Cosmos & Philosophy’:

‘... environmentally, the modern aeroplane is a bloody nuisance. [...] Briefly, emissions from aircraft make a more than trivial contribution to the chemical degeneration of the atmosphere, and perhaps assist actively in the process of climate modification. // We can start with an unfamiliar technical term, but one to keep in mind: contrails': http://www.usc.ca/...11thACAPwitl.htm

THE EYE-SORE, IN PHOTOS AND WORDS , top of document
Jump to subsection:
Contrail Photos from Ground and Space
Contrails in Words

CONTRAIL PHOTOS FROM GROUND AND SPACE , top of document

1. At least 80 contrails over the ocean near Newfoundland (3 Mb picture in PNG-format, not all browsers may display it): http://vistablightsea.nasa.gov/...
5. Contrails in artistic photos are rare, here is one (with kind permission from Steve Berlin): http://www.photouse.com/... from click
7. Contrails seen from an airplane: http://austrialasiaserverweather.com/...
10. Photograph of contrail casting shadow on lower cloud deck which is also a contrail: http://www.bact.wisc.edu/...
11. Superb contrail photo: http://www.atmos.washington.edu/...
13. TIROS satellite photo of contrails near Antarctica: http://24.229.44.109/...
14. Contrails over California, seen in Terra spacecraft imaging: http://www.seaspace.com/...

- and many more photos in section The Evidence

CONTRAITS IN WORDS , top of document

1. You cannot escape from the contrails: “Wenn man nach einem langen und erreibnehmerischen Tag vor seinem Zelt sitzt und die untergehende Sonne betrachtet, wie sie die Felsen in ein tiefes Rot taucht, und einem nichts anderes als Stille ungeht, konnte man fast die Zivilisation vergessen, wenn sich nicht die Kondensstreifen der Flugzeuge in 10,000 Meter Höhe”: http://www.protesa.at/...
2. The Asheville Tribune, June 7, 1999: “Not a cloud in the sky. When is the last time you can remember repeating that phrase?”: http://www.econtoday.com/...
3. “Airlines steal the sun for profit: on a typical blue-sky day in South-East England, up to 20 jet contrails crisscross the sky and spread into a haze” (by an action group against Manchester Airport extension): http://www.mfco.en.net/...
4. “Contrails are changing Earth’s skies. In terms of Earth’s history, they are a new kind of cloud. Jet fuel exhaust. What once were clear nights are now clear nights with contrails. Where on the planet can one go and not see a contrail”: http://www.spacestar.net/...
5. Photography: “I can’t tell you how many times I have set up to photograph a sunrise or sunset and while waiting for the best color, have a jet plane fly right through my picture leaving an ugly contrail behind”: http://www.apogeephoto.com/...
6. Scenic photographer bothered by contrails: “After dodging rattlesnakes, climbing to the point of my exhaustion, we reached a point up the valley and opposite Halfdome. The elevation we judged at about 1500 feet above the valley floor. It was risky photographically. In the morning, the mountain was solidly clouding over, but very often at this time of the year, the weather changes produced the most opportunity for photography. By late afternoon, however, the sky had cleared. Except for the business of the jet contrails, the opportunity seemed perfect”: http://www.speasart.com/...
7. Outdoor photography problems: “Jet contrails, those annoying ‘linear clouds’ that seem to appear just after you’ve set up your tripod and composed, are a problem with no real solution. Sometimes you’re immediately aware of contrails, sometimes you hear the plane and see the sky, and sometimes, well, I’ve gotten film back and am convinced that my lab put that contrail into the picture because I sure didn’t see it”: http://www.outdoorphotographer.com/...
8. Grand Canyon and contrails: “But today, artists see the air and noise pollution at the Grand Canyon are bad and getting worse. Some artists won’t go to the crowded South Rim anymore during the busy summer months, and others won’t go to the canyon at all. Gordon Hempton, a sound designer for Microsoft Corp. best known as the “Sound Tracker” for his recordings of the world’s quietest places, said, “The quiet places are really vanishing. The Grand Canyon is a waste of time for nature sound recordists, “ Jack Dykinga, a Tucson photographer who has taken nearly 6,000 shots of the canyon, said he won’t even try to take photos during the busy summer months. He said there are days when whole rolls of film are useless because jet vapor trails mar the sky. “You can’t see that far. That’s the most notable change. It’s definitely hazier,” he said.”: http://www.nonoise.org/...
9. Wilderness Lost: “Most of us who live in the Outback know the feeling of being able to look on a big scope of country that seems relatively unchanged by humans. There remain, for many of us, places where we can sit on a ridge and look across a vista that seems untouched by civilization. Frequently, though, that feeling is broken, or at least badly bruised, by the sight of an aircraft contrail, or by the sound of an internal combustion engine”: http://www.americandustback.com/...
10. An astronaut amateur laments contrails: “Once again we had crystal clear skies on Wednesday night only to find Friday night that the air had a ton of moisture at the upper level. Jet contrails went across the entire sky. Oh well... I night of learning!“: http://216.59.71.3/...
1. Spanish Civil War, September 21, 1938, text only: "The Messerschmitts are mixing it with No 4, judging by the contrails and the tracers left behind in the high, cold air... and - "The one hundred and fifty aircraft weave and unravel an enormous pattern of white trails in the air": http://www.airo.org/..

WORLD WAR II

Pictures

1. WWII picture: http://www.geocities.com/...
2. The famous TIME MAGAZINE photograph from January (June?) 1944 showing B-17 and P-47 contrails: http://members.tripod.com/... - and - same picture in another location: http://www.457thbombgroup.org/... - and on the photo's history: http://www.390th.org/...
3. More WWII contrail pictures from these sites: click - and - same picture in another location: http://www.fscev.edu/... - and more contrail pictures from one of these sites: click
4. WWII Photo of seven planes with contrails: http://www.457thbombgroup.org/...
5. WWII (picture): http://www.457thbombgroup.org/...
7. Contrails in wall art at Smithsonian's Air and Space Museum: http://www.fsccev.edu/...
12. Photograph of contrails in formation flying: http://www.flis.net/...
15. WWII contrails (excellent photo): http://home.att.net/... - and - text on: click

Text (mostly with no assurance of authenticity)

1. G.A. Paulikas: "Spring 1945 ... Up to 300 US bombers at a time ... forming clouds that looked like thick cirrus ... covering a good fraction of the sky", Letter to the Editor of Science, 1997, July 4, p.TBD
2. "Meyer, now a lieutenant colonel, was awarded an oak leaf cluster to the Silver Star for downing three B-109s and one FW-190 on Nov. 11, 1944. Ten days later, he earned his second DSC for leading 11 P-51s in an air battle east of Leipzig, against more than 40 enemy fighters. Meyer maneuvered his formation into position for a surprise attack, himself shooting down three FW-190s. In one case, he used the contrail of an FW-190 for cover, firing at the unseen enemy until he could see flashers through the contrail, then breaking off just before ramming the burning enemy plane": http://www.westnet.com/... - and also on http://www.afa.org/...
3. WWII: "The morning of 23 December [1944, I presume] broke clear and cold. "Visibility unlimited," the air-control posts happily reported all the way from the United Kingdom to the foxholes on the Ardennes front. To most of the American soldiery this would be a red-letter day-long remembered-because of the bombers and fighter-bombers once more streaming overhead like shoals of silver minnows in the bright winter sun, their sharply etched contrails making a wake behind them in the cold air": http://www.3ad.org/... - and - click - and - click - and - click - all described on click
4. Russians chasing high-flying German reconnaissance planes, recognizing them only by their roaring and their contrails: http://bitl.info.ru/... - and - click - and - click - and - click - all described on click
5. [date?] March 1944: "Strategic Operations (Eighth Air Force): Mission 246: 555 B-17s and 193 B-24s are dispatched to industrial areas and aviation industry plants at Berlin, Erkner and Oranienburg but deteriorating weather and dense contrails force the formations to abort or seek targets of opportunity": http://www.bts.net/... - and - click - and - click - and - click - all described on click
6. The spectacle of seeing hundreds of aircraft trailing formations was an extraordinary sight," said Freeman, who was a base rat at Bosted near Colchester. "On one cold and freezing day, early in 1945, when I was 15, I saw the contrails of a thousand bombers forming in the sky at one time. I didn't count a thousand, but there were 28 groups, and I knew that each group had 30 to 40 in each formation": http://www.warbirdart.demon.co.uk/... - and - click - and - click - and - click - all described on click
7. "To Fly and Fight: Memoirs of a Triple Ace" by Col C. E. Anderson with Joseph P. Hamelin "You knew how it was up ahead, and you knew it would be like that for you any minute now, the German single-seat Fw 190s and Me 109s coming straight through the bombers, mixing it up with the Mustangs, the hundreds of four-engined heavies and the hundreds of fighters scoring the brilliant sky blue with their consistent white contrails": http://www.cebdanderson.com/... - and - click - and - click - and - click - all described on click
8. Finnish-Soviet air fight, [date?] February 1940: "We completed both our missions successfully. We had a well thought out plan which had worked in that we approached our targets over Ladoga, through enemy airspace, took the photographs from the altitude of 7500 metres as fast as we could and gave a farewell bombing. All went according to the plan. We did not spot any enemy fighters. I was concerned about one detail though. I tried to alternate our height to get rid of the contrails we were making, but that was not possible on that day, humidity and cold air made my efforts in vain. I told the other crewmembers to give a more alert lookout because I knew Sovjet fighters would be drawing contrails too": http://www.dalnet.se/... - and - click - and - click - and - click - all described on click
10. February 6, 1945, Mission #25: "The contrails were dense, persistent - really hard to even see our own squadron. Our Air Leader really got worried about us being by ourselves": http://www.geocities.com/... - and - click - and - click - and - click - all described on click
12. "The p-47's would be zig-zagging over us at 45000 feet leaving contrails, and shortly after crossing the coastline we picked up German fighter planes, Messerschmitts": http://www.lts.aetc.af.mil:80/... - and - click - and - click - and - click - all described on click
13. "American fighter pilots were making contrails and the German fighters were drawing contrails too": http://www.3ad.org/... - and - click - and - click - and - click - all described on click
14. "On the 16th of July, 1944 we climbed to 30,200 feet to stay above the contrail-spawned clouds over Munich. The only time that I ever experienced real vertigo was when I could look away from those rotating contrails and get my bearings": http://www.381st.org/... - and - click - and - click - and - click - all described on click
15. "There was a little flak, but it didn't bother our group. Over the top of the clouds I could see four wings of B17s going over the target ahead of us. Everybody was making contrails. It looked like a series of twisted bowling alleys. F47s, P38s and P51s played tag around us all the time": http://metaLab.unc.edu/pub/... - and - click - and - click - and - click - all described on click
17. "In the early evening of the 16th August 1943, three Messerschmitt 109Gs were on a reconnaissance mission over Portsmouth, southern England. They were at around 36,000 feet and considered so invincible that at that height, once they had turned for their base, they maintained a steady, straight course and speed. Their unwary contrails were clearly visible against a summer sky": http://www.arberright.demon.co.uk/... - and - (where the artist got the contrail wrong) click
18. "I set the throttle to 100% and also engaged the methanol injection so as to obtain maximum power from the Daimler Benz engine. I trimmed for climb and riding just above stall speed gained altitude rapidly. I could see contrails in the distance and I headed toward them. At 23,000 feet I leveled off and began my pursuit. Off to my left at 11 o'clock was a badly damaged B-17 trailing alot of smoke. I closed in but before I could apply the coup de grace the crew bailed out of their flying coffin": http://jg27.org/... - and - click - and - click - and - click - all described on click

ASTRONOMY CONTRAILS JET AVIATION CIRRUS GLOBAL WARMING AIR PO... Page 3 of 6

http://www.astro.ku.dk/~holger/IDA/notes.html
12/11/2008
19. “Convinced that the Polish forces were doomed and, consequently, no longer a danger to Moscow’s plans for communist domination of Central Europe, the Soviets finally acceded to pressure from Washington and agreed to permit a single flight of American planes to land on Russian airfields. On a bright sunny day, on September 18, 1942, aircraft of a large group of B-17s appeared over Moscow and the white parachutes started dropping like petals from trees. It was too late, the area in our possession had been so reduced in size, and the drop was made from such a high altitude, that most of the supplies fell into German hands. This was the only attempt to provide large scale air-drops -- too little -- too late...” http://www.espressobiega.com/...

20. “On [date?] Nuremberg, you could see everyone - the plumes of smoke, the contrails from your engines. Poof! They started shooting us down like geese”: http://www.valeurandterror.com/...


22. “(date?) “The sequence was uninterrupted in spite of the worst forecast. On the May 25th I was basking at Mamin, Suurasaari sent us a report: buzzing to the west. I was not too pleased, as we had a hard time seeing the formations. The contrail was a thin veil. I wanted to land and when I reached 5000 feet the altitude the contrail stopped. I kept a sharp lookout and saw a Pe-2”: http://www.elknet.pl/...

23. “We had a max effort heading out to Germany, and the sky was clear as a bell. Really a CAVU day (ceiling and visibility unlimited). Climbing out on course, as we approached 20,000 feet the lead ship began to develop contrails. As we climbed up to our altitude of 25,000 feet, the clear sky was turning into solid contrails. The only ship I could see flying was our formation leader. I thought for sure I was flying left wing straight down, yet my instruments all said I was flying straight and level. So I would glance at my instruments and glance at my leader till we flew out of that super-contrail layer”: http://www.southerngorupwarbirds.org/...

24. “Feb. 21, 1945 Wednesday. NURNBERG-Industrial Area. First mission after being grounded for ten days. Good feeling to fly again. Also our first mission was uneventful until we reached the IP. Here and in the target area there were 2-3/10ths middle clouds, tops 16,000 feet, and 8-10/10ths thin cirrus clouds with dense contrails. The conditions made our flight formation flying and bombing difficult” http://www.446bg.com/...

1. WWII (text only, 1942): Contrail observed in Asian air-space, on April 7, year uncertain: http://glorene.com/

2. First movie called VAPOR TRAILS, 07/18/1947: showing US B-17 flying in circles leaving round rings of vapor trails. 3) US B-17 in flight leaving long line of vapor trails.


4. THE JET STORY, 10/04/1941. From NARA

5. "Vapor trails mark the path of 759th Squadron, 459th Bomb Group B-24 Liberators on the way to Germany from their base, Giulia Airfield, a former Axis base near Cerginola, Italy. Excerpted by permission from WWII War Eagle, p. 210. (James Wilson via 459th Bomb Group Association) but is the blue color added to a b/w photograph?": http://www.ethell.com/

6. "Vapor trails of 332nd Bomb Group B-24s on bombing mission deep inside Germany, Winter 1944-45, taken from my pilots seat.": http://www.fastlane.net/

7. WWII (text only, December 24, 1943): "Thousands of planes in the sky, so many vapor trails that a clear, cold sky actually became cloudy": http://www.ensate2008.com/history/westwingontop.asp

8. WWII (text only, 23 or 24 December 1944): "The weather had cleared and it looked like all the Allied Air Force came out. The sky was filled with planes and vapor trails all over. Some P-38s and Mustangs strafed the German lines down below us": http://www.99div.com/

9. WWII (text only, January 28, 1945): Weather - clear and cold. No Church services were conducted in the Bn. this morning. In the early afternoon flights of heavy bombers were heard overhead - their vapor trails showing snow-white against the clear blue sky. From their direction we would hazard that COLOGNE will be the recipient of their loads": http://victorian.fortunecity.com/

10. WWII (text only, April 8, 1945): "Hundreds of B-17 Bombers flew overhead toward the German lines. Their engines made an almost constant drone and the sky was almost white with the many vapor trails": http://www.google.com/

11. WWII (text only, April 17, 1945): "We were flying in as close formation as possible to leave a good bomb pattern in the strike area. Flak had just begun to explode as the anti-aircraft gunners searched for our range. We were easy for them to spot, as our contrails were heavy that day, pointing like fingers in the sky toward our squadron on its southeast course, end of sentence": http://www.91stbombgroup.com/

12. WWII (text only, June 4, and June 10, 1944): "Forming trouble was again experienced on this mission when assembly was attempted above 24,000 feet with contrails. The formation was all screwed up and then, when we reached the target, we made three distinct runs without cover. The PFF ship messed up mission unforgivably... and "Weather kept the entire Eighth on the ground on 9 June, but the following day the 491st went to Conches Air Field in France after another futile attempt to effect an orderly assembly at 25,000 feet with contrails.": http://www.iips.net/

13. WWII (text only, July 21, 1944): "Loss number three was 41-28987, here described by the pilot, 2nd Lt. Earl W. Newton. "We flew into contrails and overcast near Aipon Air Depot at Mukden, Manchuria. [...] The sky was clear and all aircraft were leaving thick contrails behind them. West of the target, and above our altitude, I could see a short contrail behind a plane so far away that I could not identify it. [...] I could make out a tiny dot whose contrail was turning toward our formation": http://www.49thbombgroup.org/

14. WWII (text only, 28 May 1944, over the British Coast): "Contrails were encountered at 22,000 feet and upon request, the Wing leader let down a thousand feet": click and (March 18, 1944) The time then was about 1500 hours at an estimated 60-75 ME-109 and FW-190 fighters swept in on the Group out of the contrails, and six line abreast, and attacked through the formation. Enemy fighters attacked twice more in the same fashion before": click

15. WWII (text only, probably September 26, 1943): "Our formation of bombers, marked by condensation trails progressed across the sky unmolested": http://www.members.aol.com/

16. WWII: contrails (text only) observed April 5 1945: "Unterschlauersbach (10 miles W of Nurnburg) 5 April, jet airfield shocked by our 2 ship formation. Very bad weather, 25,000 ft clouds, dense persistent contrails, assembly impossible. Back over Belgium at 800 ft 1 1/2 hrs, 900 miles": http://www.jee.co.uk/

17. WWII (text only, November 1944): "Eighty-five of the 458th Bomb Squadron launched a strike in November 1944 from our advanced base at Jiangning, China, against a Nippon Air Depot at Mukden, Manchuria. [...] The sky was clear and all aircraft were leaving thin contrails behind them. West of the target, and above our altitude, I could see a short contrail behind a plane so far away that I could not identify it. [...] I could make out a tiny dot whose contrail was turning toward our formation": http://www.40thbombgroup.org/

18. WWII (text only, September 7, 1940): As the fighters strove to break through the massive escort, bombers faltered and broke away with blazing engines, twisting streaks of pale tracer patterned the air, condensation trails from the fighters high above wheeled and curved, parathed drifted down towards the green world below, and columns of smoke rolled darkly up to them from the first funeral pyres. http://www.dymo-tech.com/

19. WWII: December 23 MMIII: "To most of the American soldier this would be a red-letter day-long remembered because of the bombers and fighters-bombers once more streaming overhead like shoals of silver minnows in the bright winter sun, their sharply etched contrails making a wake behind them in the cold air": http://www.show.co.uk/

20. WWII (text only, September 23, 1940) "An area from Dartford to Margate became a mass of twisting, whirling white vapor trails as the fighters from both sides were leaving heavy contrails. There had been no warning of bandits when our tail gunner opened fire. Four ME-262s came in hidden by the contrails and hit four of us" (crash landing follows): http://www.100thbg.com/

21. WWII (text only, November 1944) "The primary target for the first mission in November was the South Ordinance Depot at Vienna, Austria. The thick layers of clouds which had been encountered over Italy and over the Adriatic practically dissipated over Yugoslavia. Atmospheric conditions were such over the Alps, however, that extreme haze and vapor trails reduced visibility to one mile. Under these conditions the third alternate, the Marshalling Yard at Graz, Austria, was selected for the attack": http://www.40thlst.org/

22. WWII (photos, no date): "B-17Fs at altitude": http://www.2f.dogfighter.com/

23. WWII (photos, no date) (redunanted): "B-17s contrails": http://www.2f.dogfighter.com/

24. WWII (text only, April 1945): "When we started our turn to south toward Berlin, we found that though the bombing altitude had been briefed for 30,000 ft, our bombardier couldn't see downward because of the contrails from the following groups": http://www.gulfcoastwing.org/

25. WWII (text only, March 1, 1944) Weather clear and sunny. We were quite interested in watching the P-38 and the British Spitfires play around in the skies those above us weaved and spiraled against the backdrop of now bright blue sky": click

26. WWII (text only, March 1, 1944): Weather clear and sunny. We were quite interested in watching the P-38 and the British Spitfires play around in the skies those above us weaved and spiraled against the backdrop of now bright blue sky": click

27. WWII (text only, September 7, 1940): "We were in the #3 position slightly behind and below the element lead. As we neared our target of Berlin, the sky was clear but we were leaving heavy contrails. There had been no warning of bandits when our tail gunner opened fire. Four ME-262s came in hidden by the contrails and hit four of us": http://www.100thbg.com/

28. WWII (text only, March 18, 1945): "From our tail gunner opened fire. Four ME-262s came in hidden by the contrails and hit four of us": http://www.100thbg.com/

29. WWII (text only, March 18, 1945): "We were in the #3 position slightly behind and below the element lead. As we neared our target of Berlin, the sky was clear but we were leaving heavy contrails. There had been no warning of bandits when our tail gunner opened fire. Four ME-262s came in hidden by the contrails and hit four of us": http://www.100thbg.com/

30. "Meanwhile, wing assembly had been raised to 18,000, then 20,000, and finally to 23,000 feet, an altitude at which the Liberators began to handle sluggishly and formation flying became all the more difficult, thick contrails still prevented any visual sightings" ... and ..." Both Lieutenant Sinocek and Major Kelleman were aware of the critical contact with that target. The increased cloud coverage reduced visibility": http://www.airpower.maxwell.af.mil/

31. Contrails mentioned in a WWII report: "At these heights they had to carefully avoid getting so high that condensation trails were formed, as ground control had reported 20-50 plusses in the area" (August 9, 1941; L.Wedge, pers.info.): http://www.redtwo.demon.co.uk/.

32. WWII (text only, no date, but the text surely allows identification of the flight): "I carefully search the sky for enemy escorts but I can make out only three or four above the bombers": http://www.2f.dogfighter.com/.

33. WWII (text only, probably September 26, 1943): "Our formation of bombers, marked by condensation trails progressed across the sky un molested": http://www.members.aol.com/
KOREAN WAR

1. 1950: "As we moved nearer to the target, I spotted contrails across the river. For the past thirty minutes there had not been one word on the radio, and then, I heard loud and clear; "Bandits at ten o'clock, coming in." Immediately the throttles went to 100% and the dog fight was on": http://www.onr.com/user/dtg/Chapter1.htm

2. 1953: "For one thing, Red interceptors were locating the B29s by trailing their contrails on moonlit nights. Such nights were now avoided": http://www.airpower.maxwell.af.mil/...

3. "Darkness no longer afforded B-29 protection in North Korea; enemy night interceptors spotted the B-29s in heavy cloud and chased them down. The enemy fighters could spot us at a considerable distance. The nature of the contrails was such that they required certain atmospheric conditions to form. Thus, they were principally affected by altitude. At the pre-mission briefings, the interceptors fastened up the altitude of the formation of contrails could be expected with an effort made to avoid that particular altitude. More often than not, our pilots were forced to fly at a lower altitude."

4. The Fifth Air Force joined the Navy and Marines to provide fighter escorts to intercept enemy aircraft. The pilots were trained to fly at a high altitude to avoid the contrails. When they approached the enemy, they would drop their tanks and head off after the bad guys. The contrails also tended to create a cloud layer which restricted the visibility of the following aircraft. So, contrails represented a problem to us and were to be avoided if at all possible": http://www.ecotoday.com/...

5. Doubletail Contrails and flak, WWII: http://www.secretvietnamwar.com/...

http://www.astro.ku.dk/~holger/IDA/notes.html

12/11/2008