

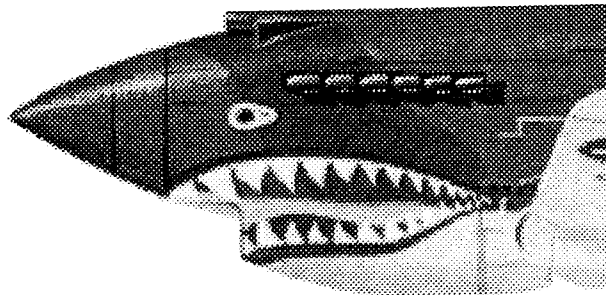
# Seattle Chapter News



Seattle Chapter  
IPMS-USA  
April 1997

## AVG Sharks !

### Camouflage & Markings of the American Volunteer Group - Part II



By Terry Clements

*Editor's Note: For those of you who have asked "where the heck is that shark stuff?" this month we bring the balance of Terry Clement's very interesting story about the AVG and their shark's mouth P-40s. Part 1 of Terry's article was originally contained in our Chapter's November, 1996 Newsletter issue. With the recent explosion in quarter scale P-40 kits, this article should be the added dimension to get you into modeling plastic Warhawks. This article clearly demonstrates the level of research that scale modelers perform in their quest for the facts behind their models. Let's hear it for Terry!*

#### Part Two: National and Group Markings

In late November, 1941, as operations neared, the now-famous national, group, and squadron markings were applied to the AVG's Tomahawks. These were not necessarily painted all at once, however. Some aircraft had various types of markings added a little at a time, much later, or not at all. The names of the pilots (and crew chiefs, too, in some cases) were painted on some aircraft at about this time as well. These were in small (about 2") white letters, typically on the port side just in front of the cockpit, although there were many variations. And since there were always

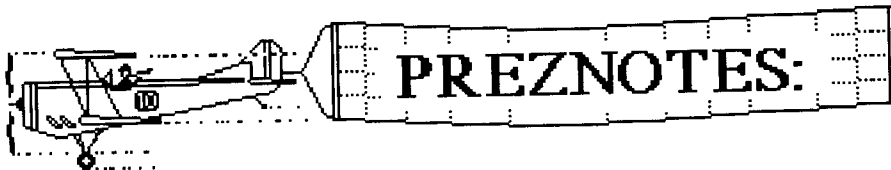
more pilots available than serviceable aircraft, such "assignments" were not at all rigid.

The typical AVG presentation of the Chinese sun insignia was on the tops and bottoms of both wings only, which was consistent with Chinese Air Force practice at the time. As always, there were exceptions, and at least one aircraft (#68) appears to have had no insignia on the upper starboard wing. A stencil or mask was undoubtedly used to aid in painting the insignia, which were all about 36 inches in diameter. While some sources have indicated that the insignia were larger on the tops of the wings, this was not the case. The only exception, in fact (aircraft #45), is seen with very slightly larger insignia on the bottom of the wings. The insignia were placed outboard of the RAF positions, and clear of both the leading edge and the ailerons.

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## TERRY D. MOORE

### IPMS USA Membership -

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### Our Chapter Members -

IPMS/Seattle seems to be blessed with many, many modelers that have secrets to share. I have seen some modelers (trophy hunters, usually) that will not give you the time of day when you ask "how'd you do that?" but that does not appear to be a problem with our group. If you have a particular problem do not be afraid to ask for a solution. Sometimes, you may receive several! Everyone seems to have their own idea on how a certain project can be handled but if it works, why not try it yourself. I still ask a lot of questions about someone's model especially if I can apply a certain technique to improve my own. There are some very unique methods used to finish or detail a model. If you have something that works, pass it along.

Terry

\* Ed's Note: If you are going to the IPMS-USA National Convention this year in Columbus or next year in the Bay Area, you'll need to be a member to join into the festivities - it's worth it too!

## Special Thanks !

For the last several issues there have been several "unsung" heros. These folks are the ones who have been trying to keep your erstwhile editor out of the "doghouse." As you can see, I am still able to sneak in some tragic errors in spite of their efforts. My hat goes out to my wife, **Helen LaBouy**, and to **Sherry and Norm Filer**, each of whom is trying to perform the unsung editing duties each issue. Thanks a million! Your help is appreciated.

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## How can I get my stuff into print?

I recognize that some of you are a bit uneasy about how you can get your material (reviews, comments, research notes or other submissions) into the Chapter Newsletter. Please don't be concerned. Don't let the mechanics throw you nor that your submission may not be quite as professional as you'd like to see it in final form. We need the input and the Newsletter will never be better than the support of the Chapter provides for. How can you help and get your submission into the editor for use in the Seattle Chapter Newsletter?

The answer is simple. First, it will be helpful if you can type or prepare your submission and insure the spelling and wording is as you want to see printed. As you are aware, our interests contain many references, words, names, places and items which are outside the normal spelling and grammar rules used on most computers. These one-of-a-kind words may be known to the editor, but if not, he must rely on the accuracy of what you've submitted, except where an error is apparent (and even the ed. can see it).

How to get to the Newsletter? Best is to bring it to a meeting and give it to the editor. It's easy to send the text via e-mail (hence the e-mail address above this note). Most art work (as you can see in this issue) is easy to scan into the computer and put into the Newsletter. The editor relies upon several programs: MS Word, Aldus SuperPaint, Photoshop and PageMaker. Please call if you have any procedural or technical questions. *Thanks*

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But there were many more colorful exceptions to this basic style. The available photographs reflect that many Third Squadron aircraft had the inside of the mouth area filled in with various shades of gray (and even blue), and colorful pinstripe embellishments, while blue, or a mix of blue and green, appears to have been a popular "lip" color on some Second Squadron aircraft, with #36 and #47 being examples.

As for Third Squadron variations, a mixed gray that closely matched the Aircraft Gray of the lower surfaces was used to fill in the mouth of aircraft #75 and #77. Duke Hedman's #92 is seen in color film sporting a medium gray color (noticeably darker than the undersurface camouflage, and probably tinted with a little red) inside the mouth area. Another aircraft, Ed Overend's #71, appears to have had the area inside the mouth painted blue. Aircraft #68 also had a light gray color inside the mouth, but by the time this plane was photographed in color in May, 1942, this was heavily weathered and chipped, and so missed by most illustrators.

There were other embellishments to Third Squadron shark head designs, such as thin black edging on the teeth and/or tongue (#75, #77, and others), additional red edging on the inside of the lips (#77), and pink edging on the inside of the lips and top of the tongue (#68).

The eyes of some shark heads also varied from the basic white and red pattern: some pupils were black, blue or tan rather than red, and black/red/white and other such multiple color combinations were used on some aircraft in a variety of styles.

These markings were sometimes revised, particularly for the many First and Second Squadron machines that were reassigned to the Third Squadron in the Spring of 1942. The blue of these machines' sharkmouths was typically replaced with black, First or Second Squadron insignia, if any, were painted out, and the Third Squadron's red bands were added. Third Squadron pinwheels

and red angels were often added as well. Aircraft #36 and #47 are also good examples of such repainting.

### Color Notes

#### ***Chinese Insignia Blue:***

The "fresh" appearance of this color is surprisingly poorly documented (due mostly to the lack of good photos of Second Squadron aircraft). Humbrol's old HG-10, "German WW I Light Blue" (now #109, "World War I Blue"), appears to be a reasonably good approximation:

It rapidly faded to this paler color, which is the one seen in nearly all photos.

#### ***AVG Markings Red:***

Humbrol #153 is a good match for the red paint used by the AVG, which appears to have been similar to U.S. Insignia Red 45. Floquil Classic #303055 "Scarlet" (and "Caboose Red") is also a good match.

The AVG "Sandy Brown" touch-up paint; similar to DuPont/Curtiss "Sandy Earth" (71009).

Humbrol 118; Floquil Classic 303189; Polly S 500812.

#### ***Markings Illustrated:***

##### **Figure 1. Hawk 81-A2 number S (serial unknown), March-April, 1942:**

This plane was assigned to Charles R. Bond, Vice Squadron Leader of the First Squadron. All numbers and lettering were in the customary white, including the inscription in front of the cockpit that identified Bond as the pilot and Dolan as the "C.C." (crew chief). Note that the small nose number, in the same style as the larger number, was retained. White fuselage band. The shark mouth was the common version with black lips, red tongue and white teeth, with the camouflage showing through. Eyes were white with black pupils with probable red trim. Color of wheel covers is unknown, but they were certainly either Aircraft Gray, Dark Earth, or Neutral Gray, the three colors documented on these machines.

Green apple insignia included black snake, white lettering, and white stick figures, always facing the nose of the aircraft. It is doubtful that a Disney tiger decal was ever applied to this aircraft.

Bond was probably flying this machine on May 4, 1942 when he was shot down by a flight of Oscars. He was credited with 8.77 kills and was awarded the British Distinguished Flying Cross for his service in defense of Burma. He volunteered to serve two extra weeks in China after disbandment of the AVG, and then joined the USAAF, scoring 3 additional victories. He became a career USAF officer, rising to the rank of Major General.

**Figure 2. Hawk 81-A2 number 7 (uncertain serial number, possibly P-8194), June, 1942:** This was the aircraft assigned to Robert Neale, (second) Leader of the First Squadron. Neale was the AVG's, and, at the time, America's highest-scoring ace, credited with 15.55 victories. There is some confusion in identifying the serial number for this aircraft. One photo (of the starboard side of this plane) states that the barely visible serial number on that side was P-8194, although another source says this serial number was used on a different airframe that was cannibalized after a crash. A film shot in about April, 1942 reveals the serial number on the port side as illustrated here: partially painted over, with the last two digits remaining, but unreadable. Note dark green touchup paint on top of the fin and rudder, the result of repairs, and which raises the possibility that the serial number confusion is the result of cannibalized tail components. Shark mouth was typical black, white and red, with camouflage showing through. White eye had black pupil with probable red edging. All numbers and letters in white, including pilot inscription in front of cockpit. The "first pursuit" green apple insignia was not applied until late in the life of the AVG, in May or June, 1942. (The tiger decal was applied in March or April, 1942.) Unlike virtually all other first squadron insignia, this one had fully painted figures (in unknown colors, but probably flesh tones, black, white, and

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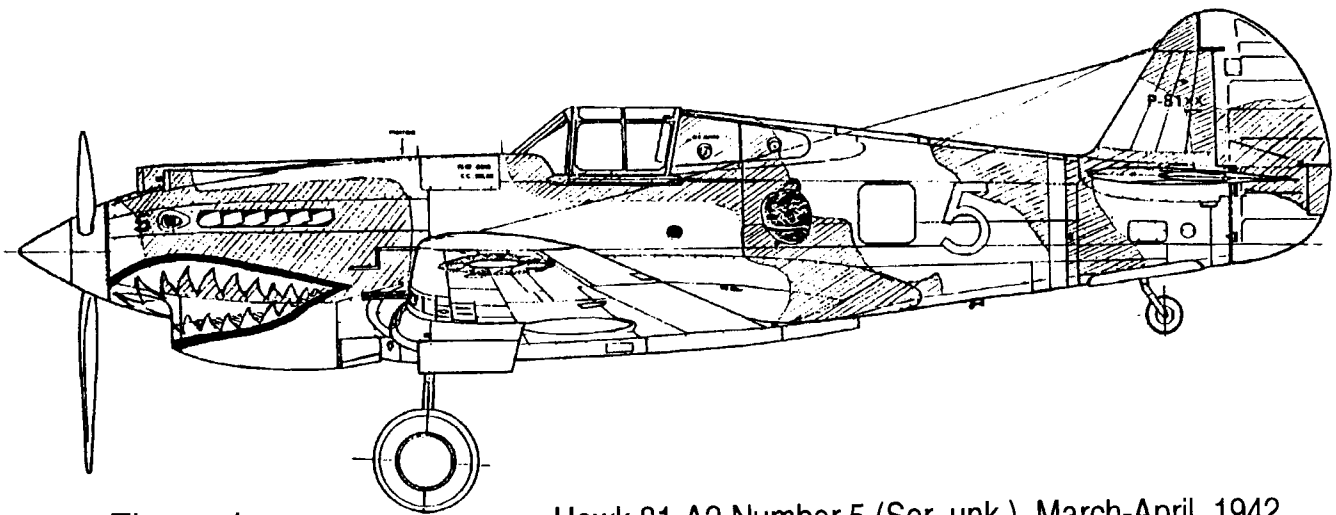


Figure 1

Hawk 81-A2 Number 5 (Ser. unk.), March-April, 1942

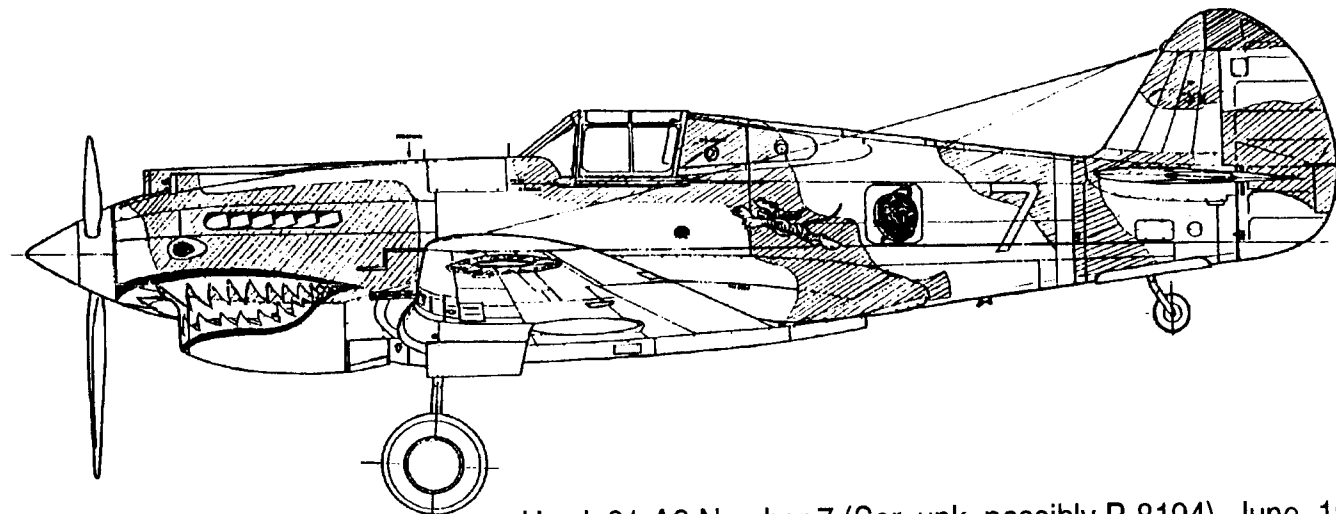


Figure 2

Hawk 81-A2 Number 7 (Ser. unk. possibly P-8119A), June, 1942

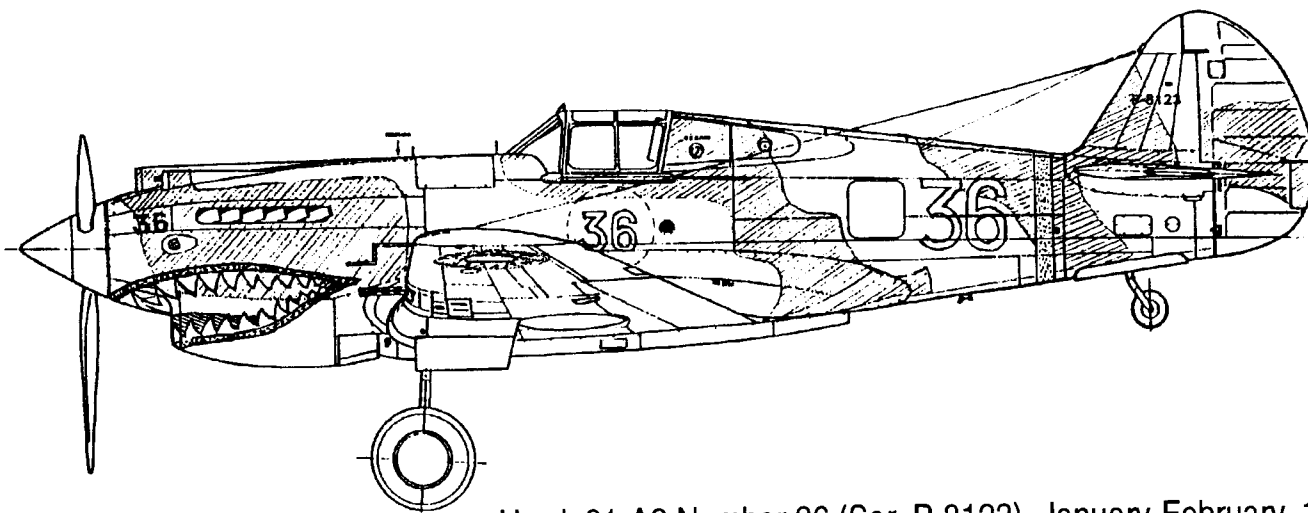


Figure 3

Hawk 81-A2 Number 36 (Ser. P-8123), January-February, 1942

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blue) rather than white stick figures. Words "1st Pur!" were added in white on the apple, just above the snake. The apple was edged in white, the snake was not. On the starboard side the fuselage number was located about 12" further forward than the position shown here for the port side. White squadron band and wheel covers.

Robert Neale volunteered to remain in China for two extra weeks after disbandment of the AVG on July 4, 1942, where he served as the first Commander of the 23rd Fighter Group until Robert L. Scott arrived at the end of that period. He later served in the Army Air Force and scored four additional victories. Regarding his AVG experience, Neale said: "I've never been a hero type, and I wasn't figuring on starting then, if ever."

**Figure 3. Hawk 81-A2 number 36 (serial P-8123), January-February, 1942:** This aircraft was assigned to Edward Rector, vice squadron leader of the Second Squadron. It was also used for reconnaissance missions with wing guns removed and a camera installed in the rear fuselage. Camouflage pattern on the fin is unknown, but that shown is a common one. Like several other aircraft (including #74 and #75), this plane had an unusual fuselage number under the cockpit. It cannot be confirmed if the typical AVG rear fuselage number was also used while this smaller fuselage number was in place, however. All numbers were white. Fuselage band was blue. Shark head design included probable blue lips with red tongue and white teeth, with camouflage showing through inside the "mouth." White eye with probable blue pupil. No pilot inscription, kill marks, squadron insignia or Disney tiger decals are documented for this aircraft. Wheel covers unknown, but were either Aircraft Gray, Dark Earth, or Neutral Gray. This aircraft was reassigned to the Third Squadron in April or May, 1942. In photos taken after that time only the standard large rear fuselage number is seen, with both the cockpit and nose numbers painted out with dark green paint. The fuselage band was repainted red, and the Third Squadron's red, white and blue pinwheels

were added. The blue of the shark lips and eye was repainted in black as well. No Third Squadron angel figures were added, however. Broken-line circle indicates position of dark green patch used to cover the cockpit numbers, which would be faintly visible underneath. Note that this aircraft was one of a few that had a rear-view mirror.

Rector was credited with 6.52 victories while in the AVG, including one on December 20, 1941 at Kunming during the AVG's first bomber interception mission. He was not flying this aircraft at the time, however. He flew Kittyhawks beginning in April or May, 1942. He was awarded Britain's Distinguished Flying Cross for his service in the defense of Burma, and upon disbandment of the AVG on July 4, 1942 he became Commander of the 76th Fighter Squadron of the 23rd FG at the rank of Major, and was credited with the first aerial victory of the 23rd FG on that date. On April 2, 1945, now a Colonel and Commander of the 23rd FG, Rector scored the **last** aerial victory of the 23rd FG, for a total of 10.75.

**Figure 4. Hawk 81-A2 number C8 (serial P-8109), January, 1942:** This plane was assigned to Charles Older, a flight leader in the Third Squadron. All numbers and lettering were the usual white. Red squadron band and red/white angel insignia. The angel on the starboard side was similar in pose, facing rear of aircraft. Five kill markings were carried at this time. Shark mouth had unusually thick black lips, white teeth and red tongue. The inside of the mouth area was filled in with a light gray that closely matched the underside color of the aircraft, and the inside edge of the lips and the top of the tongue were outlined with pink. White eye with red pupil. Third squadron red/blue/white pinwheels on wheel covers. A Disney tiger decal was applied to this machine, and the five "meatballs" were later painted out and replaced by ten smaller ones. With those changes this machine was the subject of many well-known photographs taken in May, 1942. But by that time the shark head design had weathered and chipped so much that

many details were no longer apparent, leading to many erroneous illustrations of this machine. This aircraft apparently did not have a Chinese insignia on the upper starboard wing.

Older was credited with 10.08 kills in the AVG. He served later in the war as a Lieutenant Colonel in the 23rd FG, scoring 8 additional kills. You may also remember him as the presiding judge in the Charles Manson trial.

**Figure 5. Hawk 81-A2 number 77 (serial P-8173), January, 1942:** This aircraft was the first aircraft flown by Robert T. Smith, flight leader in the Third Squadron. White numbers and letters, including a pilot inscription in front of the cockpit. Red fuselage band. Five white "meatballs" were carried at this time. Angel insignia in red and white, that on the starboard side was in a standing pose, facing the front of the aircraft. Shark mouth had black lips, white teeth and red tongue. Area inside the mouth was painted light gray similar to the undersurface camouflage color. The upper row of teeth were thinly outlined in black, and a thin black stripe was located just inside the top edge of the tongue. The inside edge of both top and bottom lips was lined in red. White eye with red pupil and probable light gray center spot. Red/blue/white pinwheels on wheel covers.

Smith flew number 77 in the famous Christmas Day, 1941, battle over Rangoon, where he was hit with 34 7.7 mm rounds (and debris from exploding bombers) while claiming an Oscar and two Sallys. This plane was wrecked when the engine failed on takeoff in February, 1942, and thus never carried the Disney tiger decals. Smith was once asked if he ever regretted joining the AVG, and he replied "Only on those occasions when I was being shot at."

### ***Part Three: Angels, Apples, Tigers and Kittyhawks***

Although each AVG squadron had a nickname, only the Third and First Squadrons applied squadron insignia in

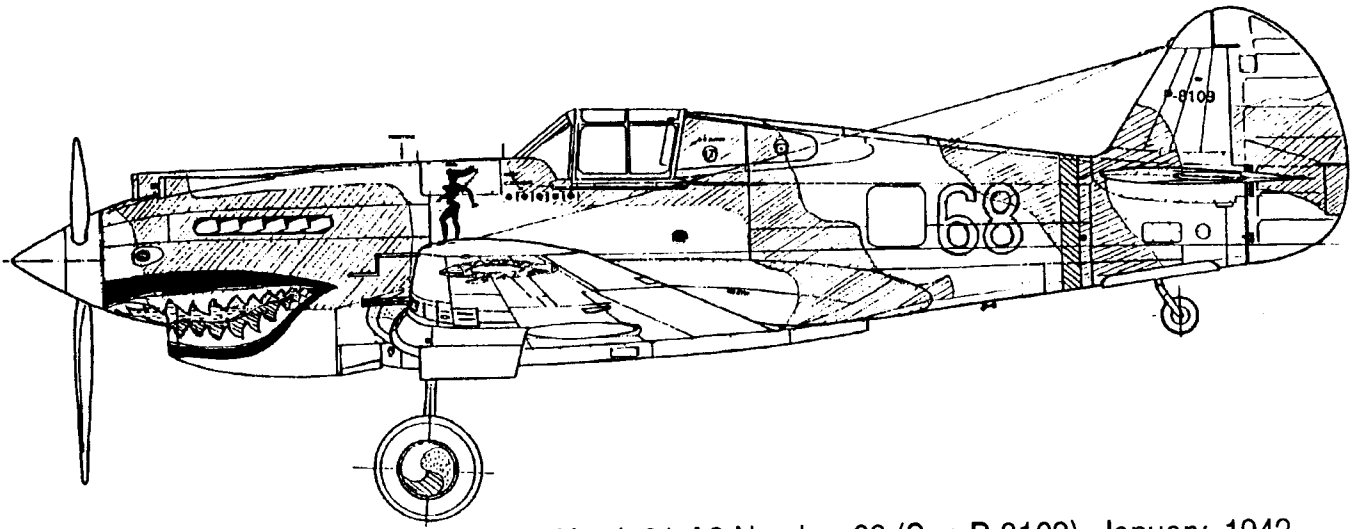


Figure 4

Hawk 81-A2 Number 68 (Ser. P-8109), January, 1942

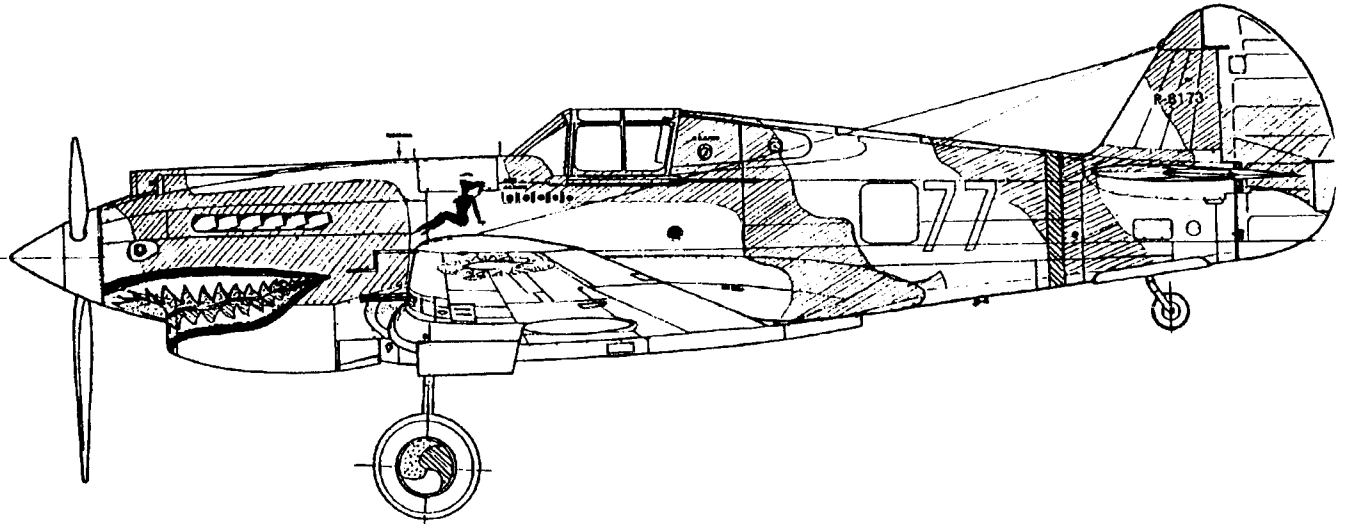


Figure 5

Hawk 81-A2 Number 77 (Ser. P-8173), January, 1942

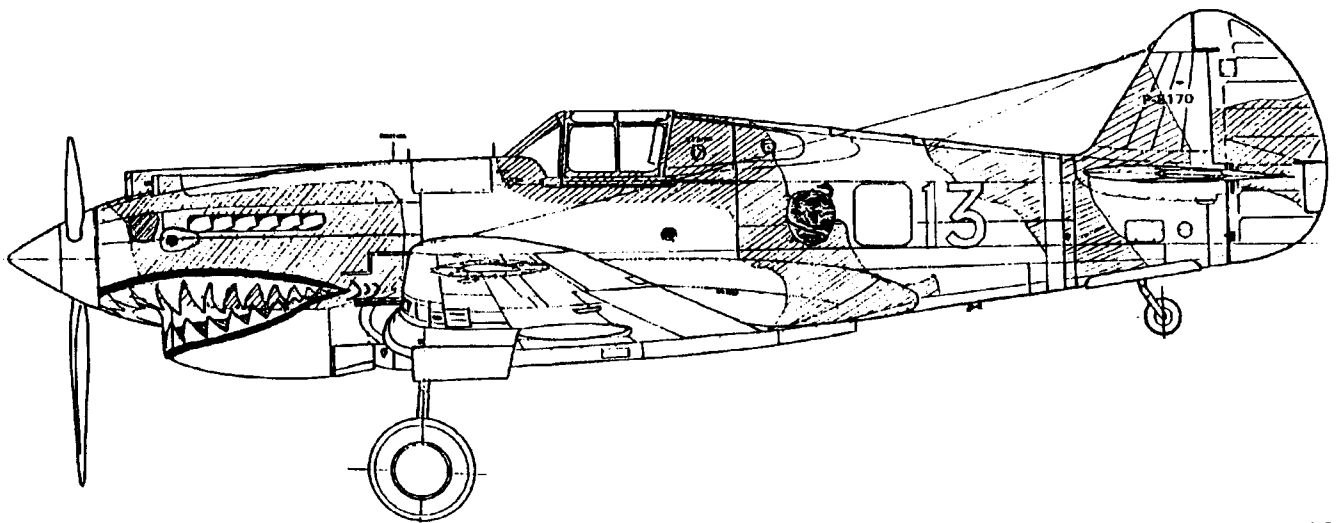


Figure 6

Hawk 81-A2 Number 13 (Ser. P-8170), January-February, 1942

(Continued from page 5)

any consistent manner. Vice Squadron Leader Charles Bond originated the "green apple" insignia for the **First Squadron**. This insignia, a humorous take on the "first pursuit" of the Garden Of Eden, was comprised of a light green apple entwined by a black snake, with simple white stick figures of a woman chasing a man and, usually, white lettering on or above the snake indicating the "1st Pursuit," "First Pursuit," "1st Pursuit" or similar. The figures always faced the front of the plane. Light green was used for the apple because Colonel Chennault thought red would have risked confusion with the Japanese Hinomaru, a reasonable concern. Different amounts of white edging and detailing and other small personal touches were added to these designs. One featured a grinning snake wearing a top hat. Aircraft #7 had realistic cartoon figures in several colors rather than the typical white stick figures. All of these apple designs were about the same size, and they were always placed near the trailing edge of the wing, although there are photos that indicate that there was some initial confusion about placement.

Squadron Leader John Newkirk decided on the "Panda Bears" as the nickname for the **Second Squadron**. A few of their aircraft are known to have sported various panda cartoons, although it seems that squadron insignia were much less common in this squadron than the other two, perhaps because it was largely comprised of pilots recruited from the Navy, where such markings were less common.

Those insignia that were applied were not uniform in style. One aircraft (#47) can be seen with a small cartoon of a panda bear riding a bicycle. Another Second Squadron plane (#38) is represented by Superscale International as having a large black and white panda bear design on both sides of the fuselage, although the author has been unable to locate photographic corroboration of this.

Stan Regis, a crew chief in the **Third Squadron**, designed and painted all of the shapely red and white angel designs for the third squadron. As a result, the third squadron was probably

the most uniformly marked squadron of the AVG. These figures were about two feet in height and appeared in numerous poses, usually different on each side of the same aircraft. Placement was always on the side of the fuselage between the cockpit and the exhaust stacks. There is only one known exception to this: one machine (possibly #83) had a more robust white-outline angel figure, obviously not in the well-proportioned Regis style, on the rear fuselage over the radio access door.

Virtually all Third Squadron aircraft also sported red, white and blue pinwheel designs on the wheel covers, "handed" for left and right sides.

Very few AVG aircraft sported personal markings beyond pilot inscriptions. Tex Hill's aircraft (#48) is reputed to have had a cowboy/steer skull cartoon on the side of the fuselage, although no photos of this plane can be found in the published sources. One of Tom Haywood's aircraft, #49, can be seen with a bulldog head insignia on the left front fuselage, and one otherwise unidentified Tomahawk can be seen in a rare photo with a "swami" head design on the left front fuselage. Superscale International has represented Tomahawk #38 as having a black panther design on the left front of the fuselage, and #3 as having small U.S. and Chinese stars on either side of the fuselage in front of the cockpit, but neither of these representations can be corroborated with published photos. Only a few aircraft had "meatball" kill markings, and these were always on the port side near the cockpit.

### *The Disney "Flying Tiger" Insignia*

The famous "Flying Tiger" cartoons seen on the sides of many AVG Tomahawks were decals designed by Walt Disney Studios and delivered to the AVG at Kunming in mid to late April, 1942. They were thus never seen on some aircraft, such as #77, which was destroyed in an accident in March, and were probably not distributed in any comprehensive way due to the extreme pressure of operations at that time.

The tiger decals were produced in left and right side versions, for placement on each side of the fuselage. And, being decals, they were of course all identical, unlike other AVG-applied markings. The decals included a light blue "Vee" (for "Victory") out of which the tiger was leaping, but this part of the design was seldom used.

Glossy varnish was brushed over the decals to make sure they stayed down, a fact quite evident in photos. The area on which they were placed was also sometimes painted with dark green paint to assure a smooth, clean surface. The tigers were typically placed amidships, just behind the cockpit and in front of any other insignia on the aircraft. There was some initial confusion about the "correct" location for these markings, and some were placed too far forward, then removed.

### *Weathering*

The AVG operated at the end of a very tenuous supply line, and never had the tools and spares necessary to maintain their aircraft at the level required by "regulations." Damage and malfunctions that could be easily repaired under better circumstances often led to the complete unserviceability of an aircraft, and perhaps half of the AVG's losses were due to inability to promptly repair damaged aircraft. The work of the ground crews in keeping the AVG airborne in the face of immense logistical hardships was a great achievement, but obviously little time was available to attend to the appearance of the aircraft. As a result they steadily grew more weathered and worn looking. The brown paint generally tended to fade on the wings and upper surfaces of the fuselage, in contrast to the more stable green paint. Fuel stains on the fuselage—the result of rapid fueling operations with variable equipment—were also very heavy. Touch-ups with dark green and sandy brown paint are also obvious in some photos. A very light gray touch up paint is visible on the lower surfaces of some aircraft. As already noted, markings faded and chipped away, particularly on

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the cowlings. By March or April, 1942, all of the AVG's aircraft had a very worn, patchy appearance.

### ***P-40E Kittyhawks***

The AVG began receiving ex-USAAF P-40Es in late March, 1942. These were ferried to Kunming by AVG pilots from west Africa via "the Hump." Their U.S. insignia and markings were left intact during these trips, although serial numbers were painted out before they left USAAF custody. They were in typical U.S. Dark Olive Drab 41 and Neutral Gray 43 camouflage. After arrival in China, AVG personnel painted out the fuselage star insignia with dark green paint, and applied 36" Chinese insignia in four positions on the wings, directly over the U.S. stars. Photos indicate that these Chinese insignia were **decals**, since their appearance is quite uniform and glossy. The blue insignia color was similar to the medium blue already in use by the AVG. Interestingly, the then-standard Insignia Blue "U.S. Army" designators (also glossy decals) were left intact under the wings on most, if not all, of these aircraft.

The AVG markings added to these replacement aircraft were simpler and obviously more hastily applied than the markings placed on the group's Tomahawks in the days preceding the outbreak of hostilities. They all received the AVG's customary shark mouth and white fuselage identification number, but few had squadron bands applied, and none have been documented with any AVG fin serials, pilot inscriptions, or squadron or personal markings.

The shark mouths of course reflected the different nose contours of the Kittyhawk, and were generally less embellished than many found on AVG Tomahawks. They included black lips (usually thinner than before), white teeth (usually smaller and more numerous than on the Tomahawks), and a red tongue (usually larger than before). It appears that, at least initially, the area above the tongue was not filled in on most of these shark mouths, leaving the Olive Drab

camouflage to show. Photos suggest that by the end of the AVG's service on July 4, 1942 this part of the shark mouth was increasingly being filled in with medium blue or black paint, with black rapidly becoming the "standard" following activation of the 23rd FG. The shark eyes were usually less rounded in shape than those on the AVG's Tomahawks, although a white eyeball with red and/or black pupil continued to be the most common colors.

The fuselage identification numbers on these aircraft were applied sequentially upon receipt, and although they were applied in the usual rear fuselage location, they were typically cruder looking than those that had been applied to the AVG's Tomahawks. Numbers from 102 to 134 have been documented in photos. Only a few second squadron Kittyhawks have been documented as having (blue) squadron bands. On the other hand, the Disney "Flying Tiger" decals were applied to many P-40Es, and in fact a newsreel film shows one being put on. Like the AVG's Tomahawks, and about every other plane painted Dark Olive Drab, these aircraft very rapidly became quite weathered and faded in appearance.

### ***Painting Note***

Below are some hobby paint matches for colors referred to in this part. Note that the manufacturers' "names" for their paints do not necessarily conform to those of the colors they match here, and that, as a general matter, hobby paints with the same "names" WILL NOT necessarily match identically named prototype paints or hobby colors.

Dark Olive Drab 41:

Humbrol #108; Xtracolor X111; and Tamiya XF-62 are pretty good matches. Note that most hobby paints called "Olive Drab" are not very good representations of Dark Olive Drab 41, a notoriously complex and unstable color, and only one of a long series of Olive Drabs that has been used on American military equipment. Most hobby paints appear to have been matched to the later

version of Olive Drab found in FS 595. (Dark Olive Drab 41 was not carried over into FS 595.) Of course the finish of the AVG's Kittyhawks was very faded and discolored, so a "fresh" appearance would not be accurate in any event.

Neutral Gray 43:

Nearly all hobby paints labeled "Neutral Gray" are not truly neutral in color, and thus not a good match for this color. A mix of six parts Floquil Reefer White and four parts Floquil Engine black will produce a good Neutral Gray 43 according to Robert Archer, author of the recent Monogram book on USAAC camouflage and markings. Other pure whites and blacks in this proportion should work as well.

### ***PART THREE:***

**Figure 6. Hawk 81-A2 number 13 (serial P-8170), January-February, 1942:** This plane was assigned to Robert Little of the First Squadron. The First Squadron fuselage band color was specified as white, but on this machine, and a few others, it appears to have been either "toned down" in some fashion or painted a pale gray (or even the light green used for the apple). All numerals were white, as was the small pilot inscription in front of the cockpit. The small nose numbers were retained for a while after the shark teeth were added, but they were painted out with dark green paint some time in January or February, 1942. The AVG shark teeth were painted in the common black, white and red colors, with the underlying camouflage showing through inside the mouth. Note the three white "dimples" at the rear of the mouth. The pupil of the eye was tan or pink. The first squadron "apple" insignia was light green, with a black snake outlined in white, and white stick figures and lettering. Wheel covers were Dark Earth.

Bob Little was a veteran of the 8th Pursuit Group, and one of only a few Flying Tigers who had actually flown P-40s prior to joining the AVG (having 375



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hours in the type). He was a flight leader and, for a while, group engineering officer. He flew in the AVG's first interception mission over Kunming, China on December 20, 1941, and in many of the intense bomber interception and air superiority battles over Burma in early 1942. Despite many combat hours, his record of victories grew only one or two at a time. His final score was 10.55. He was killed on May 22, 1942 (by AA or a premature bomb detonation) while flying a Kittyhawk on a ground attack mission against Japanese units at the Salween River gorge.

**Figure 7. Hawk 81-A2 number 49 (serial P-8133), May-June, 1942:**

This aircraft was originally flown by Frank Swartz of the Second Squadron, but this is how it looked after it was transferred to Tom Haywood of the Third Squadron. The fuselage band was red, and all numbers and lettering were white. The shark mouth was in the common white, black and red colors with the camouflage showing inside. The eye had a red pupil with a light colored spot (probably pink) in the center. Wheel covers were Aircraft Gray. The camouflage pattern on the fin is not clear in photos, but this is a good guess. This was one of the few aircraft that carried the light blue "V" portion of the Disney "Flying Tiger" decal. It also had the head of a Disney tiger decal under the cockpit, the remains of an apparently misplaced decal that had been scraped off. Note the discoloration due to the varnish that had been brushed over it. This was also one of the few AVG Tomahawks that carried individual markings: a nicely rendered bulldog's head on a white disk just in front of the tiger head. Colors are unknown, but the dog was probably in shades of brown, with white, black and red details. Note that dark paint (almost certainly the AVG's dark green) was used to provide a fresh surface for the tiger decal and the bulldog design, in addition to covering up the old pilot inscription.

Frank Swartz had been a pilot in Torpedo Squadron Five. In the AVG he often performed administrative jobs due to the shortage of serviceable aircraft.

He flew in several actions during the Burma battles in early 1942, however, where he damaged one Nate. He then volunteered to stay in Burma and fly with the Third Squadron after the Second Squadron was rotated to China. On March 21, 1942 he was seriously wounded during an air raid on the AVG base at Magwe, Burma. He had left the protection of the slit trench to rescue Crew Chief John Fauth, who was wounded and exposed on the airfield. He was evacuated to a British military hospital in India, where his wounds became infected, and he died on April 24. Fauth also died of his wounds, the only AVG ground crewman to lose his life.

Thomas C. Haywood, an ex-Marine pilot, was a flight leader in the Third Squadron and served until disbandment of the AVG. He was credited with 5.08 victories. He was initially assigned aircraft number 94, and during the Third Squadron's first combat, over Rangoon on December 23, 1941, he claimed the destruction of one Sally but was hit with ten 7.7 mm rounds and had an aileron disabled. He is probably even better known for blurting out the very un-military callout preceding this interception: "Hey Mac, I see the bastards!" He was credited with two more Sallys in the famous Christmas day air battle. After serving in the AVG he returned to the U.S. and worked as a test pilot for Consolidated-Vultee, and after the war he flew for the Flying Tiger Line, the all-cargo air line founded by ex-AVG pilots.

**Figure 8. Hawk 81-A2 number 75 (serial P-8186), January-February, 1942:** This plane was assigned to William Reed, a flight leader in the Third Squadron. All numbers and lettering were in the usual white. A small white pilot inscription appeared on the port side, ahead of the cockpit, and a similarly styled small white crew chief inscription was painted in this position on the starboard side. This aircraft was one of a few that originally had the fuselage number painted under the cockpit. This was then painted out with a dark green disk, although the number remained faintly visible underneath. The

white nose number was not painted over. The red and white "angel" on the port side was in a standing pose, facing forward with arm outstretched. On the starboard side the angel is standing and seen from the rear. Red, white and blue pinwheel designs were painted on the wheel covers, although they are not seen in the earliest photos. Three kill markings are seen under the pilot inscription in some photos. The shark mouth was black, white and red, with the area inside the mouth painted a mixed light gray similar in tone to the underside camouflage color. The upper row of teeth was thinly outlined in black. A thicker black stripe edged the top of the tongue. The eye was red and white.

Bill Reed was credited with 10.5 kills in the AVG. He served to disbandment, then rejoined the Army Air Force. With the rank of Major he commanded the Seventh Fighter Squadron of the Chinese-American Composite Wing, where he was credited with 7 additional air victories. In January, 1944 he was killed while bailing out of his aircraft after returning from a mission, being apparently knocked unconscious before he could open his parachute.

**Figure 9. Hawk 81-A2 number 92 (P-8101), February-March, 1942:** This machine was flown by Duke Hedman of the Third Squadron. Serial and fuselage number were white, and the tail band was red. The shark head design included black lips, white teeth, and a red tongue, but the area inside the mouth was filled-in with a medium gray color that was undoubtedly hand-mixed. This gray appears in a color film to have a slight reddish tint. (FS 36320, with some red, is close.) The pupil of the eye was red. Red/blue/white pinwheels were painted on the wheel covers. A pilot inscription was added in front of the cockpit, and five kill marks were painted under it. Red and white "hell's angels" were added by Stan Regis in front of the cockpit. The pose of the one on the starboard side is uncertain. No tiger decal is documented for this machine (certainly not at this date). This pattern of overpainting on the

(Continued from prior page)

fin was one of the most common. **Figure 10a (below)** shows the pattern of the very pale gray paint used to (probably) paint out a British roundel on this machine. The starboard wing probably looked the same. Only one other plane shows such obvious overpainting on the wing undersurfaces.

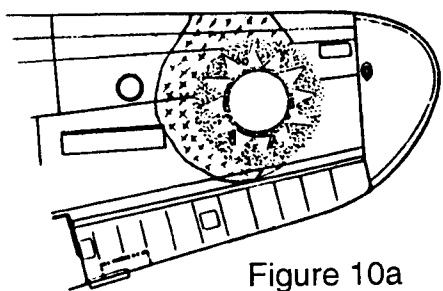


Figure 10a

Duke Hedman was a flight leader of the Third Squadron. He became the first AVG "ace" by participating in the destruction of five Japanese aircraft over Rangoon in the legendary Christmas Day, 1941 bomber interception. Due to the AVG system of dividing claims, he was officially credited with 4.83 kills, and these were his only official victories with the AVG. After the AVG disbanded, he flew transports with the China National Aviation Corporation.

**Figure 5. P-40 E number 106 (serial unknown), May, 1042:** This Kittyhawk is typical of the replacement aircraft received by the AVG beginning in late March, 1942. These ex-USAAF planes were finished in standard Dark Olive Drab 41 and Neutral Gray 43 camouflage. Wheel covers were Neutral Gray also. Note the slight overspray of Neutral Gray on the fuselage under the leading edge of the horizontal stabilizer, and the typical low fuselage color demarcation. The regulation yellow serial numbers were overpainted with Olive Drab by Army personnel prior to ferrying, with no traces remaining visible in photos. The other U.S. markings remained during ferrying operations. Upon receipt by the AVG, the fuselage star insignia were painted out with dark green paint while Chinese insignia were placed in the usual four positions on the wings, covering the U.S. wing insignia in the process. These Chinese insignia

appear to have been decals (being glossy finished), but they were in a medium blue color very similar to that previously used by the AVG. The "U.S. Army" designators were left on the bottom of the wings of this aircraft, as they were on virtually all other Kittyhawks in AVG service. Note that regulations specified Insignia Blue 47 for these designators, not black as they are usually portrayed. (Some authorities state that black was often used in error, however.) These were also probably decals as they also had a glossy finish.

The fuselage numbers were in white, and, like virtually all AVG-applied markings on its P40Es, they were obviously more hastily applied than those that had been applied to the Tomahawks in November, 1941. The shark mouth was in black, white and red, with no additional embellishments and the underlying Olive Drab showing above the tongue. The eye was white and black on this machine. Disney tiger decals were seen on many of the AVG's P40Es, usually displayed in the almost horizontal alignment seen on this machine. Like most of the AVG's P-40Es, this machine carried no squadron band on the rear fuselage. It also had no AVG fin serial or other markings.

#### *A Note On Sources*

The complete bibliography for this article contains 43 items, but of these about a dozen photo collections and other sources were the most important. The late R.T. Smith, a pilot in the Third Squadron of the AVG, provided prints of a number of very useful color photos in his collection, and answered my many queries about various details. His published AVG diary was also very helpful, as was that of Charles Bond. Armorer Chuck Baisden's published diary was very useful in sorting out a number of armament and equipment details, and also contained a few good photos. The most important sources of photos were Sydney Chivers' Flying Tigers: A Pictorial History of the American Volunteer Group, which Seattle IPMS member Wayne Fiamingo graciously allowed me to examine; Frank and Terry Losonsky's Flying Tiger: A Crew Chief's Diary; and Larry Pistole's

Pictorial History of the Flying Tigers. Of course many other books contained one or two photos of particular subjects. In addition to these primary sources, camouflage color data were obtained from Dana Bell's work on Curtiss's P-40 colors published a year or so ago in Finescale Modeler, the Monogram Aviation Publications books (with color chips) on U.S. Navy and U.S.A.A.F. colors, Tanner's RAF Museum book with chips of British WWII colors; and of course Klaus's IPMS Color Guide. Ian Huntley's work in Scale Aircraft Modeling was the first to outline the likely explanation for Curtiss's odd color substitutions. Several video documentaries were also very useful in illustrating these aircraft, including "AVG: The Call to Glory," and, especially, "Flying Tigers and Fourteenth Airforce Story," which contains some terrific color film footage shot by AVG members. Jeffrey Ethell's various color photo collections should also be mentioned since they include several of R.T. Smith's color photos, and are fairly easy to locate. There have been a number of histories of the AVG written through the years, although most of them are not very good, and of course none are of any value regarding camouflage and markings of AVG aircraft. Daniel Ford's recent book is probably the most thorough and objective history, if sometimes a bit annoying in tone. Duane Schulz's book is also pretty good, if less complete.

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*Editor's Added Notes: In talking with Terry about his research and information about the AVG's colorful P-40s, several other interesting tidbits were learned... AeroMaster Decals have recently released their 1/48th sheet of decals based on this research. The sheet number is FP 48-07. Also of interest for those of you who desire added information and data on these aircraft, Terry has put this together with several nice black and white photographs. This booklet is available locally from the Supply Depot and is approximately \$15.50. For further information, contact Kevin at the Supply Depot.*

*I trust you will join me in thanking Terry for this article.....this is one terrific piece of fine work and again, reflects well on our entire Seattle Chapter!*

*Way to go Terry!*

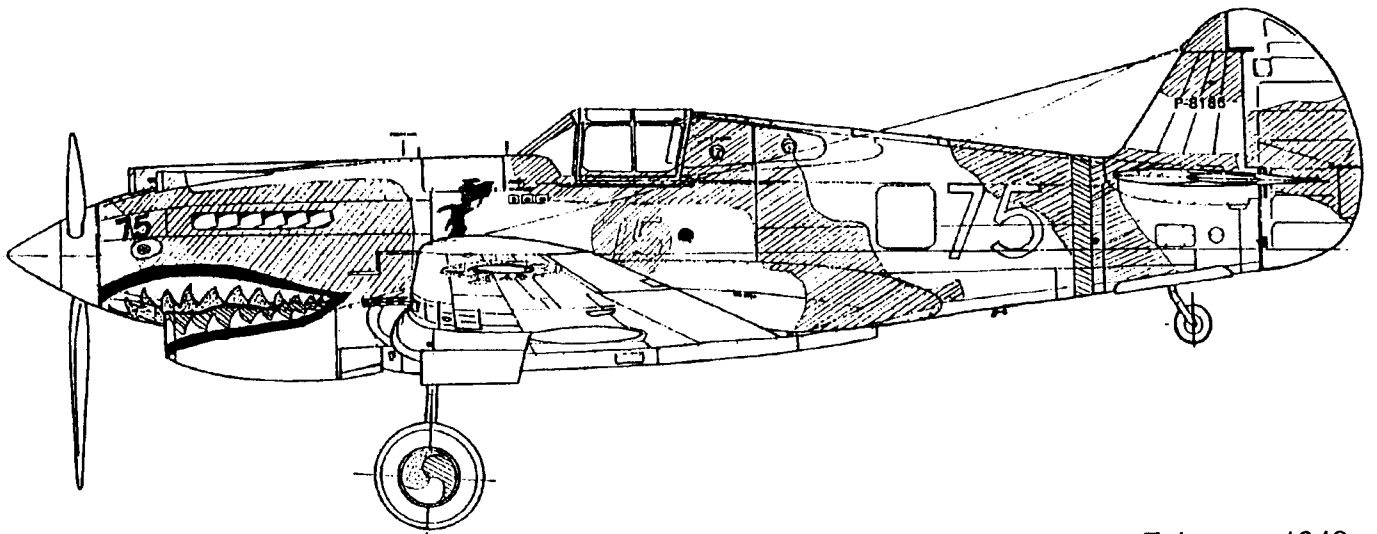


Figure 8 Hawk 81-A2 Number 75 (Ser. P-8186), January-February, 1942

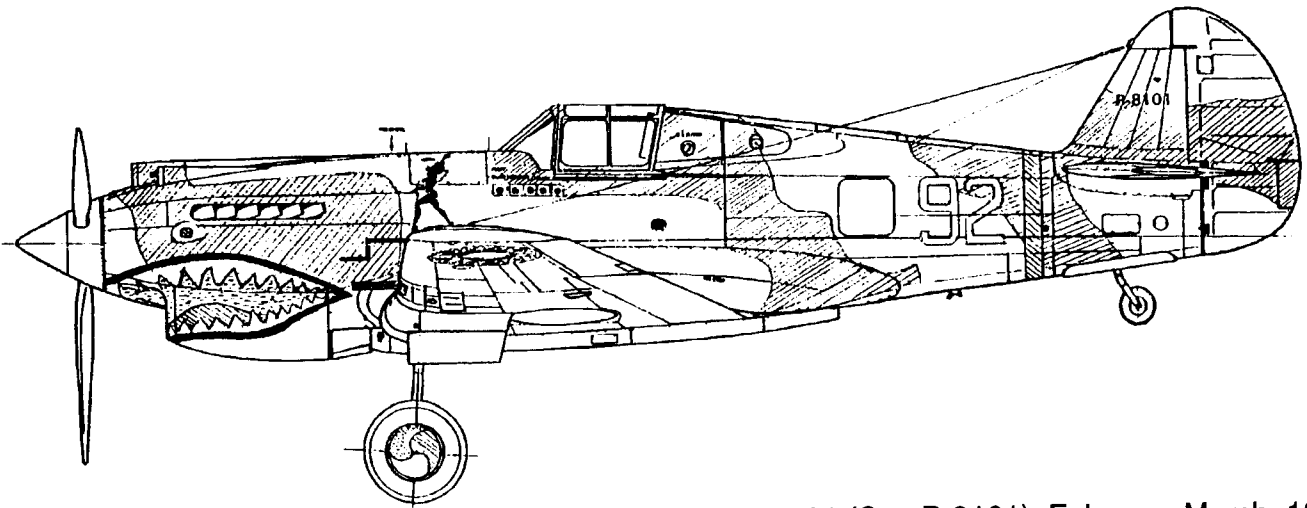


Figure 9 Hawk 81-A2 Number 8101 (Ser. P-8101), February-March, 1942

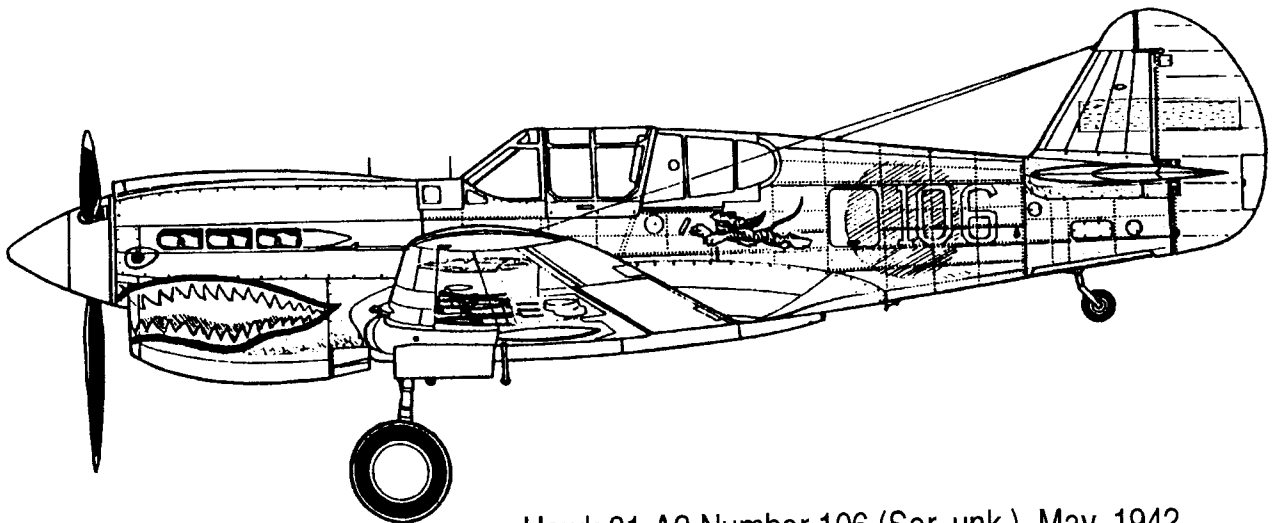


Figure 10 Hawk 81-A2 Number 106 (Ser. unk.), May, 1942

## TOOLS & TECHNIQUES

### AIR BRUSHING MODELS USING A CO<sub>2</sub> BOTTLE AS A PRESSURE SOURCE

Bill Johnson - IPMS-USA #  
25241

Living as I do, in a condominium, sharing my model room wall with a neighbor with whom I hope to maintain amicable relations, I was reluctant to install a reciprocating compressor and tank. This was primarily due to the noise factor, although size constraints as well as the necessity of draining condensation (water) did not sound favorable to me.

Originally I had a Badger Diaphragm type Model 180-11 which I brought with me when I moved out to the Seattle area from Chicago in '91 is a fine unit and I, in no way wish to criticize it. However, it is not entirely silent as many of you may know. Also, there is a pulsation present in the air delivered.

What to do...

Fortunately, I live near Tim Lawson, whom many of you know. He offered an alternative, using a cylinder of CO<sub>2</sub>. I investigated and found the advantages CO<sub>2</sub> offers are as follows :

1. Air brushing with CO<sub>2</sub> is silent (The neighbors, remember). Only a slight "hiss" is heard when the air brush is spraying .

2. NO moisture trap required. CO<sub>2</sub> is a dry gas, no water splatters in the sprayed paint.

3. This installation occupies no more than one square foot of floor space, and is completely portable.

4. No maintenance following the initial investment.

I have been using CO<sub>2</sub> for about 4 years now and find I average about 4 to 6 months of painting on a 20 lb. tank. This will certainly vary between model builders, but should offer a guideline.

Right now, to swap an empty tank for a full one costs me \$13.31, tax included. A full tank registers 800 P.S.I. and is fully adjustable at the turn of a screw. I presently have two H# Paasche single action air brushes hooked up to my tank. With the use of the #1, #3 and #5 tips, these offer all the versatility I require.

In the sketches with this article, I have attempted to illustrate what my installation looks like.

I'm sure any welding gas supply store can furnish a cylinder. I happen to deal with Central Welding Supply on Highway 99 in Lynnwood. To purchase a 20 lb. fully charged CO<sub>2</sub> cylinder will cost about \$115.00, plus tax, call it \$125.00. You then own a tank and need only swap it when empty.

Tim Lawson told me the regulator he uses. I obtained mine at Airware Compressor Sales and Service located at 188th St. SW, west of Highway 99 in Lynnwood. (You may have guessed by now, I live in Lynnwood.) There are many other outlets for regulators, consult the phone book in your area.

I'm using a Norgren Regulator Part #R83200NLA. The tag on it states the primary pressure limit to be 3000 P.S.I.G. max. (That's "Pounds Per Square Inch Gauge" for any one not knowing) The secondary , or outlet pressure is 125 P.S.I.G. Max Temperature limit is shown as 175° F max.

All threaded connections are 1/4" N.P.T. pipe thread. The item shown in the sketch as "brass fitting to CO<sub>2</sub> tank" was purchased where I purchased my CO<sub>2</sub> tank. The large brass nut threads onto the tank outlet and is installed using a fiber washer. (A new washer comes with each full tank.) The brass pipe end of the fitting is 1/4 N.P.T. pipe thread and screws into the regulator.

The gauges may be obtained where the regulator is purchased.

The pipe nipple to the air brush or

brushes (in case of two, use a pipe tee for hook up), should all be 1/4" galvanized pipe and all screwed joints should be made up using thread seal tape of Teflon to assure a leak proof joint. **TIGHTEN ALL JOINTS SECURELY!**

The approximate cost for the regulator and two gauges should not exceed \$50.00. Pipe fittings, tape, another \$3.00 or \$4.00, and you should be operational. So for about \$175.00 to \$180.00 you have a maintenance free, portable, spray system that is silent, and clean.

Oh yes, when you finish air brushing, don't forget to shut off the tank, also keep the tank away from room heat sources.

**HAPPY AIR BRUSHING!**

(Bill's illustrations  
continued on next page)



### Remember -

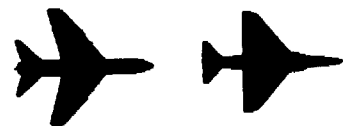
#### **Spokane Model Show & Contest - April 26**

Don't forget Spokane's big model show for the year on the 26th...details in last issue.

#### **Seattle Chapter "Pre- meeting Breakfast - April 12**

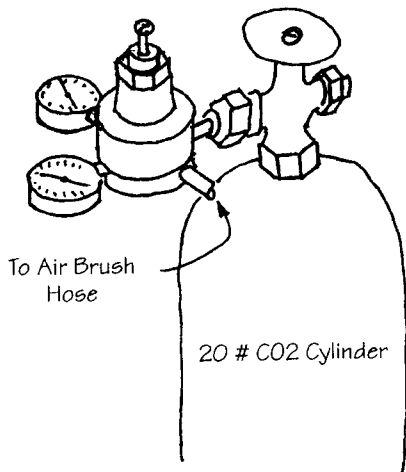
See reminder notes on the last page of this exciting issue.

### **WHOSE & WHAT ARE THEY?**

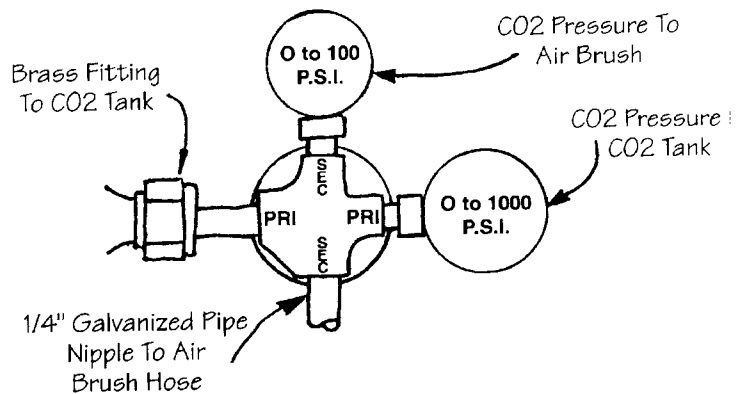


**A-7 & A-4**

## Bill Johnson's Illustrations -



View looking at back side of regulator



### Kit Reviews & Notes:

#### CC-144 Kit Review

Keith Laird

This is Leading Edge's first full kit to be released. The Canadair Challenger started life as an entry into the corporate jet fleet of the world. Commercial models are the 600 and 601, with the newly developed RJ Regional Jet Commuter.

Leading Edge Models' address is: E 83 Skyline Cres., N.E., Calgary, Alberta, T2K-5X2, Canada. This electronic warfare Canadair 600 Challenger is Kit #600.1.72; it is a resin kit and costs approximately \$44.00 Canadian.

The instructions are five pages with interior and exterior photos, multiview drawings and notes.

Decals are included for three airplanes in low vis paint of light gray, FS 36375, and blue gray, FS 35237. Testors Model Master #1728 Light Ghost Gray and #1721 Medium Gray are quoted. Representative aircraft are CE 144 Challenger #144607 "Sparky" of 434 Squadron, Cold Lake, Alberta. CE 144 Challenger #144603 of 414 Squadron also from Cold Lake, and CC 144 Challenger #144606 assigned to 412

Squadron Qatar, United Arab Emirates, Gulfwar, 1991.

Decals are sharp, good color and clear film between letters is almost totally invisible. Cockpit paper decals appear to be high quality photo copies of actual instrument panels and consoles. Instructions call for use of white craft glue to hold these in place.

The kit consists of 83 pieces in off white resin and clear windows and cockpit section. The wing is all one piece. All panel lines are recessed and very fine. All small parts require some clean up. Major components also require some clean up with a major removal of excess material from cockpit area. The instructions call for washing all components and cautions against the thinning of some surfaces as these are quite thick on the real airplane. My fuselage has a little warp but does not appear to be too serious. The Challenger is a large airplane and for those with the desire, a cavernous cabin awaits.

Assembly appears to be straight forward and I do not anticipate any major problems. Some details on the instruction sheet indicate items found on the Challenger 601. Leading Edge has a kit for the Transport Canada 601 Flight Inspection Aircraft. Kit # 601.272, other

kits listed are 601.1.72 Canadian Armed Forces in red and white scheme, this kit includes a scheme for German Air Force Challenger in white/blue/gray. Kit #600.2.72 is listed as a undesignated future release.

I picked up my kit from "Stealth Hobbies" in the Vancouver, B.C. suburb of Coquitlam. Martin Riehl, the owner, had the reviewed kit, the Transport Canada kit, and decals for the other listed schemes.

Leading Edge Models is a relatively new company making after-market decals and conversion kits for mainly Canadian subjects in 1/48th and 1/72nd. Some items are 1/72 RCAF Lancaster MK10 ASR, "Pinnocchio" Dakota, CL 215 Waterbomber, Airspray Douglas A-26 borate bombers (both scales), CF-18 (both scales), RCAF Fairchild C 119 Radar Nose, Boeing 707/CC 137 tanker, Grumman SA-16 Albatross RCAF, DeHaviland Dash-8 ECM airplane, CF 104 presentation markings, Ukrainian MIG-29 Aerobatic Team, T-33 presentation markings and the "Red Knight." This is not a complete list, but it shows that someone is out there making items for other interests both military and civilian. The price range is between \$4.50 to \$13.95 Canadian.

Keith

# MARKINGS & REFERENCES

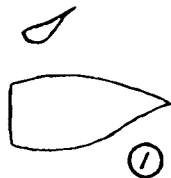
# Errata:

## HAND PAINTING SHARKMOUTHS

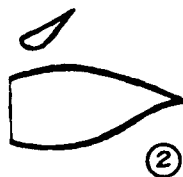
**Terry Moore**

Although there are many decals on the market with sharkmouth, the majority of them would not fit an aircraft model other than a P-40 as the majority of decals are for that plane. There are no sharkmouth decals for an A-7D "Corsair II", Blenheim IV, or HS 129, nor many other aircraft. The only thing left to do is to hand paint one. Here is a basic idea of one way to do the job.

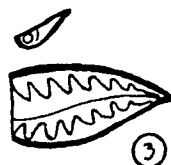
Step 1. Lay out the design on a piece of tape — Scotch magic mending tape works well. Cut out the shape of the eye and the mouth and place the stencil on the model. (It is best to do it after the model has been painted.) Spray the area with white (Floquil white is good for this). After it has dried, remove the tape.



Step 2. If the sharkmouth requires it, paint an outline around it in the color required. Do the same with the eye. Use a very small brush and work slowly.



Step 3. With a draftsman's 6H pencil or another hard lead pencil, outline the shape of the teeth, the tongue and the eyeball on the painted area.



Step 4. Carefully paint the colors in the mouth and eyes, red first, then the other color. Do the same with the eyeball. If the two colors are separated by a white line, cut out a thin piece of tape and apply it over the white area before painting the mouth colors.



T.P. MOORE 3/71

**Editor's Note:** This is yet another note from a time and place far, far away (in our earlier Chapter 1971 newsletters). This very relevant and timely article exhibits another of those far-sighted examples of where a member of the Seattle Chapter was using techniques and procedures to do things "the hard way" during a time when there weren't the many fine after-market products and decals we are blessed with today. Terry's notes are still the best way I know of to approach the task of "taking the bite out" of any shark mouth project.

As you will remember from last month's comments by your humble editor, there would be mistakes. Among those called to my attention this month was the rubarb in my prior notes about the Hawegawa Buffalo kit. In that otherwise splendid piece of journalistic prose, I apparently also led you to believe there were folding wing devices in the F2A wings. Well, you should know better, Jim Schubert did and has pointed out the error of my ways to me; those were, in fact, just the housing covers for the wing mounted machine guns.

For those of you keeping score, that's:

Brian	1
Jim	1
Bob	0

So far that is....

## NEXT MONTH'S CONTENTS:

1. Contest Results from the March 22 RECON
- 2.
- 3.
- 4.

**Yep, that's about it, no news, articles, whatever=very thin newsletters....hint, hint.....**

### 1997 Meeting Dates:

- April 12
- May 10
- June 21
- July 12
- August 9
- September 20

## JAPANESE COLOR SYMBOLS-

Nabe Watanabe & Bob LaBouy

For the many members who have been constructing the various excellent Japanese kits for several years and have wondered what all of those little symbols are in English, I would like to submit the following summary. The translation has been provided by a Japanese engineer, "Nabe" Watanabe, who was then living in Seattle.

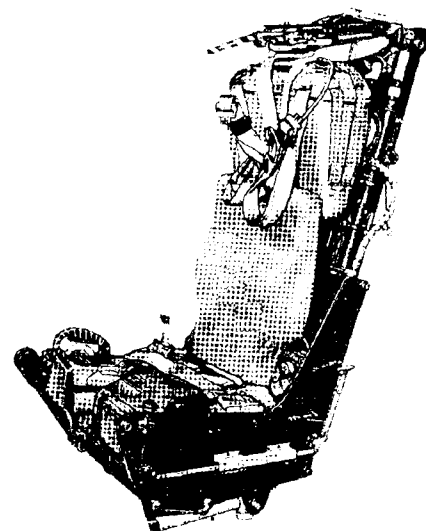
赤	Red
茶	Brown
銀灰	Aluminum
白	White
黒	Black
銀	Silver
タン	Tan
グレー	Gray
ライトガルグレー	Light Gull Gray
ガルグレー	Gull Gray
ダークグレー	Dark Gray
ライトグレー	Light Gray
オレンジ	Orange
オレンジイエロー	Orange Yellow
インターナショナルオレンジ	International Orange
フロート全面オレンジイエロー	International Orange Yellow
黄	Yellow
つや消	Matte
艶有	Shiny, Polished
艶消し	Grimy
半艶消し	Dirty
鉄サビ	Burnt Metal (Rust)
ダークグリーン	Dark Green
グリーン	Green
オリーブグリーン	Olive Green
ジंकロ	Zinc Chromate Green
青	Blue
全面銀	All Silver
色	Color
又は	Or
左	Left
右	Right



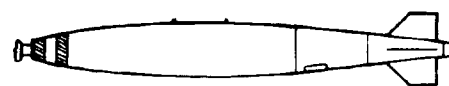
### WHAT IS THIS ANYWAY?

Did you ever wonder about all of those crazy ejection seat numbers and which a/c they actually were used in? Which model and seat should be used together and what are those silly things which hang all over the seats? Well, for those of you who wondered or cared, I'll begin to unravel as much of the puzzle as I can in next month's Seattle Chapter Newsletter.

By the way, what seat is this and where is/was it commonly found?



Mk 83 bomb (HE)



## Meeting Reminder:

Saturday, April 12, 1997


National Guard Armory  
Room 114  
1601 West Armory Way  
Seattle

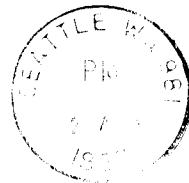
Directions: From North or Southbound 1-5, take the N.E. 45th St. exit. Drive West on 45th, crossing under Highway 99 (or Aurora Ave North) toward N.W. Market St. in the Ballard district. Continue West on Market St. toward 15th Ave. N.W. Turn left (south) onto 15th Ave. N.W. and drive across the Ballard Bridge until you reach Armory Way (just as you see the Animal Shelter). Watch for signs. You should park in the Metro Park & Ride Lot.

If coming from South Seattle, take Highway 99 onto the Alaska Way viaduct to Western Ave. Follow Western Ave. north to Elliott Ave. until it turns into 15th Ave N.W., then to the Armory Way turnoff.

Interested in a "pre-club social hour?" As mentioned previously, some of us modeling insomniacs plan to meet at McDonald's Queen Anne store, at the S.E. corner of 1st Ave North and Roy Street (that's in the Larry's Market / Hansen Bakery building, about 1 block from the Seattle Center. Those interested will meet there about 0830 (8:30am) before the mtg.

*Breakfast Anyone?*

 **Seattle Chapter - IPMS-USA**  
Terry Moore, President  
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Bellevue, WA 98008